Supplemental 1: Milky Sea Database Entries

Justin Hudson, Steven D. Miller

1 Milky Sea Observations

1.1 Somalia 1615

Observation Start Date: 08/16/1615
Observation Start Hour: (?)
Observation End Date: 08/16/1615
Observation End Hour: (?)
Approximate Lat: 10 deg 30' N
Approximate Lon: 52 deg 00' E
Observing Ship/Sensor: Red Dragon
Observor(s): William Keeling
Description: We fell in the night into a white water like an extreame shoald but had no ground at 60 fathom line, the lattd about 10:30:
Reported In: The East India Company Journals of Captain William Keeling and Master Thomas Bonner, 1615-1617, pp. 95
Approx Location: Somalia
Confidence In Sighting: High Confidence

1.2 Arabian Sea 1769

Observation Start Date: 08/15/1769
Observation Start Hour: 19:00 LOC
Observation End Date: 08/16/1769
Observation End Hour: (?)
Approximate Lat: 15 deg 10' N
Approximate Lon: 57 deg 00' E
Observing Ship/Sensor: Kelfall
Observor(s): Newland, Captain
Description: Read March 12, 1772. It has been remaked by feveral navigators, on their paffage from Mocha to Bombay, Surat, &c. that they had difcovered in the night fpots of water as white a milk, and could never affign any reafon for it; and many have been fo much alarmed, that they have immediately hove to and founded; but I never heard of any body ever getting ground. In my paffage acrofs thofe feas in the Kelfall, I difcovered all of a fudden, about 8 o'clock in the evening, the water all round me as white as milk (intermixt with ftreaks of ferpentine lines of black water). I immediately drew a bucket of it and carried it to the light, where it appeared juft as other water; I drew feveral more, and found it the fame: fome I kept till the next morning, when I could perceive no difference from that alongfide. We had run by the log 50 min. from the time we firft obferved it till daylight, and during all that time the water continued white as milk, but at full daylight it was of its ufual colour. The next evening about 7 o'clock the water appeared again as white as before; I then drew another bucket and carried it to a very dark place, and holding my head clofe to the bucket could perceived, with my naked eye, an immumerable

quantity of animalcules floating about alive, which enlightened that fmall body of water to an amazing degree. From thence I conclude that the whole mafs of water muft be filled with this fmall fifh fpawn or animalcules, and that this is without all doubt the reafon of the water's appearing fo white in the night-time. We run by the log, from the tiem we firft faw it till the latter part of the fecond night (the time we loft fight of it) about 170 miles. N.B. Latitude about 15 deg 10' N. and S.W. dift. from Cape Aden 12 deg 18' E. On the 30th of Auguft 1769, at 3 o'clock in the morning, I faw a comet 8 deg 20' from AldebaranS.W. and the tail ftreaming to the Weftward. I made the meridian distance from Cape Aden to Striking Sounding on the Malabar Coaft (in the lat. of 14 deg 2'N.) 27 deg 31' E.
Reported In: Philosophical Transactions (1683-1775), Vol. 62 (1772), pp. 93-94
Approx Location: Arabian Sea
Confidence In Sighting: High Confidence

1.3 Arabian Sea 1777

Observation Start Date: 01/30/1777
Observation Start Hour: (?)
Observation End Date: 02/03/1777
Observation End Hour: (?)
Approximate Lat: 16 deg 00' N
Approximate Lon: 59 deg 00' E
Observing Ship/Sensor: (?)
Observor(s): Johan Splinter Stavornius
Description: On the 30th, we met, at night, with a very fingular appearance in the colour of the fea. It affumed fo great a degree of whitenefs, that it was perfectly like milk. During the day, we had obferved that the water was darker and browner than ufual, and had loft that azure clearnefs which it almoft always has in the open fea: in proportion as the evening twilight diminifhed, it became whiter, and encreafed gradually in whitenefs till nine o'clock, when it was fo white, that the whole fea appeared as if covered with a white fheet, or exactly like the appearance, in the night-time, of a flat country overfpread with fnow. The horizon was not diftinguifhable, except to the northweft, where the line of diftinction between the fea and the fky was difcernable, from the latter being fomewhat dark and gloomy. This phenomenon was entirely diftinct from the luminous appearance which if frequently obferved in the water of the ocean, as, inftead of giving any light, the whole was a deadly palenefs, excepting clofe to the veffel, where it feemed mixed with fome fparks of light. While it was the ftrongest, I had the lead caft feveral times, but we found no ground with a line of one hundred and fifty fathoms. I had fome of the water taken up, and examined it directly with the microfcope, but could not fee anything in it, with a glafs of the greateft magnifying powers; to the naked eye, it appeared as clear as crystal; and on, tafting it, it feemed to have loft fomething of its briny and bituminous tafte. The fame appearance was obferved by the Englifh captain Newland, in the fame part of the ocean, with the difference, however, that he faw it intermixed with black ftripes running in a ferpentine direction through the whitenefs, which I did not fee in it. He likewife difcovered animalculae in it, by putting a glafs, with fome of the water, in a dark place, and holding his hand clofe over it; but neither did I obferve any thing of this kind, although I likewife filled a glafs with the water, and put it in a dark place, but without holding my hand over it. The account given of this phenomenon by Mr. Nuberk, volume ii, page 84 and 85, agrees perfectly with the above. About midnight, when the moon rofe, the water refumed, by degrees, its former dufky colour, and on the following morning it appeared the fame as the day before. We were then, by eftimation, fixty leagues from the coaft of Arabia Felix, which was the neareft land. Our north latitude was 16 deg, and our compaffed fhewed a northweft-erly variation of five degrees. We had a light breeze of wind, chiefly from the northeaftm, varying, however, from E.N.E. to N.N.E.; the thermometer ftood at 72 deg; the fky was, in general, flightly clouded; and the ftars were vifible: i had no reafon to fuppofe that the moon had any influence upon this phenomenon, or had contributed to it, it having been in the quarter the day before; and the more; as we did not difcover any ftrong current. I remember

to have read fomewhere in Valentyn, that this fame appearance is alfo fometimes obferved in the feas between Amboyna and Banda; but I am well affured that it would never be more diftinctly feen than when I obferved it. On the following evening, and part of the night, we faw this phenomenon again, and every night till the 3d of February, but in a flighter degree every fucceeding time, and on the evening after that day, it was not vifible at all; there was however, a ftrong luminous appearance in the water; we were then, by efitmation, thirty-five leagues from the neareft part of Arabia Felix, being in the north latitude of 17 deg 30', and our compaffes ftill fhewing a northwefterly variation of five degrees. During the time we faw this white water, the fky was fometimes entirely clear, with a fine ftarlight down to the very horizon, and fometimes it was cloudy, and even quite overcaft; fo that it does not appear to me that the ftate of the weather had any influence upon it: the themometer continued, for the moft part, at the point at which it was the firft evening.
Reported In: Johan Splinter Stavornius, Voyages to the East-Indies, vol 3, pp 280-285
Approx Location: Arabian Sea
Confidence In Sighting: High Confidence

1.4 Arabian Sea 1832

Observation Start Date: 08/22/1832
Observation Start Hour: 19:15 LOC
Observation End Date: 08/22/1832
Observation End Hour: (?)
Approximate Lat: 16 deg 00' N
Approximate Lon: 59 deg 35' E
Observing Ship/Sensor: (?)
Observor(s): G. Buist
Description: August 22nd, 1832--Lat. 16 deg N., long. 59 deg 35 E. At 7.15 p.m. observed the water to become quickly discoloured and of a very white luminous appearance, the sea considerably foamed and smoothed down, having all the appearance of a shoal water over a coral and sandy bottom. Observed the same occurrence both in the Nautilus brig and Elphinshtone schooner on previous years when in the same vicinity
Reported In: Buist, 1855, Notes on Certain Discoloured Appearances met withon the Surface of the Sea in. Warm Latitudes
Approx Location: Arabian Sea
Confidence In Sighting: High Confidence

1.5 Indian Ocean 1832

Observation Start Date: 08/22/1832
Observation Start Hour: 07:45 LOC
Observation End Date: 08/22/1832
Observation End Hour: (?)
Approximate Lat: 21 deg 40' N
Approximate Lon: 59 deg 40' E
Observing Ship/Sensor: H. C. Clive
Observor(s): (?)
Description: During a passage from Bombay to the Persian Gulf, on board the H. C. sloop Clive, on the 22nd August, 1832, at a quarter before eight o'clock at night, a phenomenon appeared of the following nature, and to all on board of an unheard-of kind, which gave rise to transitory feelings of apprehension as to the vessel's contiguity to danger. Sailing under double-reefer topsails and fore sail at the rate of nine and a half miles per hour, before a strong S W. monsoon wind and a high sea, without

any indication of a change in the elements, the ship was surrounder instanter by water as white as milk or snow; it seemed to have no termination until it reached an altitude of 75 deg or 80 deg, where it subsided in a strongly marked ecliptic, above which the heavens presented a beautiful and bright bluish cast, not dissimilar to polished steel. No line of horizon was visible; the dead white colour of the water close to the ship as it increased in distance from her very gradually brightened until, where I supposed the horizon to be, it assumed a silvery aspect, which increasing as it ascended became brilliant and dazzling towards the zenith, obscuring the stars and clouds which had before this visitation been distinctly visible. The sea in a moment became smooth, the ship, from rolling and labouring considerably, quite steady; no diminution in the wind occurred, but a sensation that it had fallen even to a calm was general, but momentary. The delusion was occasioned by the instantaneous steadiness of the vessel, as well as the vessation of the previous noise from the lashing of a mountainous and confused sea against the vessel's sides and on her decks; her progress through the sea, howevr closely scrutinized, could not be observed; the disturbed water alongside and in her wake, as well as the foam around her bows, did not contrast with the adjoining unagitated fluid, not withstanding from the velocity of the ship through the water these must have been considerable. Not a particle of phosphoric matter was once observable, either in the surrounding ocean or in the water immediately displaced by the ship's passage through it; but when taken up in a bucket and agitated with the hand, such was visible, but not in a greater proportion than is usual, nor did the water vary in appearance from common sea-water; nothing could be perceived to attribute this strange phenomenon to. Animalcules of a minute kind were perceptible, as likewise a few pieces of glutinous susbtance of a purple colour, but neither in any considerable quantity, nor differing from what is usually found in the seas of the Indian Ocean. We sailed the distance of fifteen miles without the slightest change in the appearance of the sea or sky, when in a moment this extraordinary phenomenon vanished, the ship at the same instant encountering the like high and turbulent sea as previous to her envelopment. The ship was not within one hundred miles of the eastern coast of Arabia or of soundings, but sailing in what is termed deep ocean water. I have before mentioned that the ship was quite steady during her progress through the white water; this was the case, with the exception that in a few instances she gave a heavy roll as if influenced by a following swell; these were not more frequent than once in a quarter of an hour. Latitude 21 deg 40 N., long 59 deg 40 E.; therm 87 deg, bar. 29. 09. The phenomenon I have attempted to describe appeared twice after we were first extricated from it, for periods of about twenty minutes; its brilliancy as well as influence over the waves as previously described; the transition from high and mountainous seas to a smooth and seemingly quite ocean, and change again to turbulence, was as sudden as a flash of lightning. On my arrival at Muscat, a few days after, I endeavoured to gain some information on the foregoing matter; but beyond finding that the phenomenon was occasionally met during the S W. monsoon, about the limit noted, and that the water was then quite fresh, I could ascertain nothing satisfactory. My informants were the Nakodas, or captains of H.H. the Imaum's ships of war, who frequently navigated between Muscat and Zanzibar, consequently must pass about the spot the Clive met what i have related. The Arab Captains were firm in their assertion in the particulars of the fresh water, although they confessed that they had never tasted it. I had, as also the surgeon of the vessel, and, as I mentioned before, it did not vary in any way from ordinary sea-water.

Reported In: Buist, 1855, Notes on Certain Discoloured Appearances met withon the Surface of the Sea in. Warm Latitudes
Approx Location: Indian Ocean
Confidence In Sighting: High Confidence

1.6 Arabian Sea 1849

Observation Start Date: 01/25/1849
Observation Start Hour: 18:30 LOC
Observation End Date: 01/26/1840
Observation End Hour: (?)

Approximate Lat: 16 deg 13' N
Approximate Lon: 61 deg 51' E
Observing Ship/Sensor: Moozuffer
Observor(s): Kempthorne, Captain
Description: Moozuffer, 25th January, 1849.--I cannot permit this opportunity to pass by without describing to you, in the best way I am able, a most extraordinary phenomenon which we all witnessed on the night of the 23rd instant. It would indeed require a far abler and more scientific pen than mine to do justice to it--however, I hope you will take the will for the deed, and pardon all imperfections. At 6.30 p.m. observed a very remarkable milky appearance in the water, the colour assuming the same ting as a shallow mud-bank or sand bank. The sea, which had, a few minutes before, been turbulent and confused, suddenly became smooth and placid, and the air felt cold and chilly. In the space of an hour the whole verge of the horizon, as far as the eye could reach, was most brilliantly illumiated. The vessel shortly after entered a vast body of water of the most dazzling brightness, and of highly phosphoresent nature; in fact it looked as if we were sailing over a boundless plain of snow, or a sea of quicksilver. The surface of the ocean for miles in extent was unbroken-not a wave or rippe disturbed it, and the waters seemed so dense and solid, that the Moozuffer actually appeared as if she was forcing her way through molten lead. That part of the surface which was broken by the stroke of our huge paddle-wheels resembled small patches of thick milk or cream. The sky and everything around us was quite lighted up by it. The weather was particularly fine, though the atmosphere was damp and moist: the wind was light from the N.W., stars overhead clear and light, but those of a lesser altitude were rendered dim by a haze. The horizon nearly the whole time was dark and ill-defined; a few thin cumuli, floating very low down, occasionally swept past; but no other peculiarity in the atmosphere could be perceived until about ten o'clock, when a singular light was seen in the heavens to the northward, as if day was dawning or the full moon was either setting or just rising. It strongly resembled a faint Aurora Borealis, being of a roseate tinge near the horizon, and was a steady fixed light, but without those corruscations which are usually observed in the higher latitudes. It extended along the horizon in the form of a segment of a circle from N.W. to N.E., and the altitude of the centre of the arch was 15 deg. It continued visible until a sew minutes after midnight, when it disappeared as suddenly as it appeared, and the sea about the same period lost also its luminous quality. The light in the heavens and the lightness of the sea were, however, again seen for about ten minutes at 2 a.m., when both became once more invisible. The horizon, except where the light appeared, was everywhere dark and indistinct, and could not be made out: the sky and sea were apparently blended together. The phenomena was altogether as beautiful as it was extraordinary. I could have stood on the deck gazing at it the whole night, and should not have felt fatigued. There was something grand and sublime in such a scene as I have faintly endeavoured to pourtray. No language of mine could ever do justice to it. We were upwards of six hours in passing thorugh this vast body of luminous water, and during that time we ran a distance of upwards of forty miles. Our lat. on first entering it was 16 deg 13 S., and long. 61 deg 51 E., so that our position was exactly abreast of the entrance to the Persian Gulf, and in the fair channel to the Red Sea. From the fact of our having seen immense quantities of sea-weed floaitng past whilst in this luminous water, I should conclude the accumulation of this and other decayed matter, whether vegetable or animalculae, was the sole cause of this phosphorescent appearance; and that all this matter might have been swept out of those narrow seas by strong currents which meet no doubt about this spot: and I am still more inclined to believe this is the case, as a luminous stream of water has often been noticed nearly in the same lat. and long. and about the sea season of the year. I saw it once in the Victoria when I commanded her, in the month of January, 1842, whilst on our voyage from Aden to Bombay; but the sea was not nearly so bright then as this time. The colour of the water so strongly resembled a shoal that I stopped the engines, and took several casts of the lead but could get no bottom with eighty fatomes of line. Several buckets of water were drawn up by Dr. Wilson, of the Moozuffer, but nothing whatever could be seen. It seemed as clear as crystal: on taking a bottle of it, however, in the dark, it became highly phosphorescent, giving out a strong lgiht. It was full of animalculae: some were in the shape of most minute globules of gelatinous substance, and others were not unlike small worms about an inch in length and about the size of a fine hair. On removing the bottle to the light, the animalculae became

instantly invisible. The light seen in the heavens I cannot account for, unless it was the low fleecy clouds which hung on the verge of the horizon that reflected back the brightness of the sea; but why the whole sky should not have assumed the same appearance, I cannot imagine. it continued to shine in one spot only, and disappeared at the same time the sea lost its brilliancy. I send you an extract of the log, in which the luminous appearance in the sea and heavens is noticed:--' at 6.30 p.m., passing through an illuminated sea: the sea also became suddenly smooth, with queantities of sea-weed floating by. At 10 an extraordinary luminous appearance to the northward, as that of a full moon rising or setting: the water of a thick white; with a very dark horizon: wind N.W.--hazy blue sky, with passing clouds.'
Reported In: Buist, 1855, Notes on Certain Discoloured Appearances met withon the Surface of the Sea in. Warm Latitudes
Approx Location: Arabian Sea
Confidence In Sighting: High Confidence

1.7 Arabian Sea 1850

Observation Start Date: 01/17/1850
Observation Start Hour: 07:00 LOC
Observation End Date: 02/03/1850
Observation End Hour: 2:00
Approximate Lat: 15 deg 00' N
Approximate Lon: 63 deg 00' E
Observing Ship/Sensor: H. C. Steamer Atalanta
Observor(s): (?)
Description: 17th January, 1850.--Lat. 15 deg N., long. 63 deg E., 7 a.m. --Observed the water to have a luminous appearance. 9 a.m.--The sea of a turbid chalky colour. 10 a.m.--The sea assumed its natural appearance. 18th Jan.--1.am.--The sea assumed a luminous appearance and continued so till 3 a.m. 19th Jan.--1 a.m.--The sea gradually became of a dark chalky colour inclining to milky. An intense haze all round, so that it was impossible to see ten miles off. 3rd Feb., 1850.--Lat. 10 deg 50N, long. 6 deg 20E., 7 p.m.--The sea had a similar appearance to what it has now assumed on passing across from Vingorla to Aden on the 17th Jan, at 9 p.m.,and so on till the 19th, till 2 a.m., betwixt lat. 15 deg and 14 deg 30N., and long 63 deg 50 to 56 deg 50 E.
Reported In: Buist, 1855, Notes on Certain Discoloured Appearances met withon the Surface of the Sea in. Warm Latitudes
Approx Location: Arabian Sea
Confidence In Sighting: High Confidence

1.8 Arabian Sea 1854

Observation Start Date: 01/16/1854
Observation Start Hour: 19:00 LOC
Observation End Date: 01/16/1854
Observation End Hour: (?)
Approximate Lat: 11 deg 59' N
Approximate Lon: 59 deg 02' E
Observing Ship/Sensor: SS Bengal
Observor(s): John Bowen, Captain
Description: At 7 p.m. ship entered into a perfectly white milky sea, cloudy on the horizon but perfectly clear; bright star-light; moon half an hour from rising. Stopped and tried for soundings 90 fathoms. No bottom. Density of the water before entering that strange appearance 11 deg. Density of the water when sounding 14 deg. Sympiesometer 29 deg 90. Barometer, 30 12. Thermometer, 80 0.

Latitude 11 deg 59 N. Longitude, E. 59 2. I may remark that previous to entering this strange sea, there was a moderate riplle on the water and after leaving it also, but smooth like oil when in it. Signed John Bowen.
Reported In: Buist, 1855, Notes on Certain Discoloured Appearances met withon the Surface of the Sea in. Warm Latitudes
Approx Location: Arabian Sea
Confidence In Sighting: High Confidence

1.9 South China Sea 1854

Observation Start Date: 07/27/1854
Observation Start Hour: 19:45 LOC
Observation End Date: 07/27/1854
Observation End Hour: (?)
Approximate Lat: 11 deg 27' S
Approximate Lon: 105 deg 40' E
Observing Ship/Sensor: Shooting Star
Observor(s): A. R. Wright, Surgeon
Description: Dear Sir,--A short time since, I had an opportunity of examining some Nos. of your journal and find (Jour. No. II. 1854, p. 206) that you solicit further notices of such phenomena as Capt. Bowen has given you on the preceding page. Accordingly I send you the following copy of notes taken immediately after witnessing the phenomena they describe. Ship 'Shooting Star' bound from N.Y. to Hong Kong, Thursday, July 27th, 1854. Lat. 11 deg 27 N.[should read S. not N., this is known from another account aboard this ship during the same night.]; Long 105 deg 40 E. 7 3/4 P.M. A little cloudy on the horizon, but very clear bright starlight, fresh breeze. Air 73 deg F. Ship entered light-colored water, and in about 15 minutes the sea as far as the eye could reach appeared like an immense field of snow, no ripples, but smooth like oil, so that when the ship's bows threw up a ripple it immediately fell back to its former level. Orders were given to heave the lead, when 60 fathoms found no bottom. The light from the water illuminated objects on deck and dimmed all stars within 20 deg of the horizon. Looking over the widest part of it, the horizon appeared like a dim Aurora Borealis. Ship's head North, sailed 10 miles through this patch, then 1/2 a mile through ordinary colored seawater, and again through another patch of 10 miles of light water: limits of light water well defined. Dipped up deck a tup full of this water, and found it 78 1/2 deg, same as water in the morning. The tub presented a brilliant sight, being filled with bright self-luminous serpentine animalculae, varying from half an inch to five inches in length. Examined carefully in the hand, by the light, they were found to be nearly transparent, about the size of a hair in the middle, and tapering a little towards each end; [???] a jelly-like substance which burnt in the candle with a red light, and cripsed like burnt whalebone. A few were differently formed. Two were found capable of propelling themselves through still water in a tumbler. One of thse was in the form of concentri ring half an inch in diameter, with teeth-like projections on the inner-edge, and seemed to propel itself by contracting the diameter of the ring: it was preserved alive abut 36 hours. This examination satisfied me that the light is emitted by animalculae,but I am most anxious to know if scientific men can expalin why it appears at certain times and within such prescribed limits. Your's truly, A. R. Wright, Surgeon, P. and O. Co.'s S.S. "Lady Mary Wood.'
Reported In: Buist, 1855, Notes on Certain Discoloured Appearances met withon the Surface of the Sea in. Warm Latitudes
Approx Location: South China Sea
Confidence In Sighting: High Confidence

1.10 Java 1854

Observation Start Date: 07/27/1854
Observation Start Hour: (?)
Observation End Date: 07/27/1854
Observation End Hour: (?)
Approximate Lat: 09 deg 30' S
Approximate Lon: 106 deg 30' E
Observing Ship/Sensor: Shooting Star
Observor(s): Kingman, Captain
Description: The whole appearance of the ocean was like a plain covered with snow. There was scarce a cloud in the heavens, yet the sky appeared as black as if a storm was raging. The scene was one of awful grandeur, the sea having turned to phosphorus, and the heavens being hung in blackness, and the stars going out, seemed to indicate that all nature was preparing for that last grand conflagrations which we are taught to believe is to annihilate this material world
Reported In: Herring and Watson 1993
Approx Location: Java
Confidence In Sighting: High Confidence

1.11 Indonesia 1855

Observation Start Date: 11/19/1855
Observation Start Hour: (?)
Observation End Date: 11/19/1855
Observation End Hour: (?)
Approximate Lat: 8 deg 00' S
Approximate Lon: 80 deg 00' E
Observing Ship/Sensor: Java's Welvaren
Observor(s): K. C. de Veer
Description: De zee ziet zoo wit als melk.
Reported In: Tim Wyatt, Unpublished Notes/Paper
Approx Location: Indonesia
Confidence In Sighting: High Confidence

1.12 Java 1856

Observation Start Date: 09/11/1856
Observation Start Hour: 21:00 LOC
Observation End Date: 09/11/1856
Observation End Hour: (?)
Approximate Lat: 12 deg 00' S
Approximate Lon: 108 deg 00' E
Observing Ship/Sensor: Jan Schouten
Observor(s): J. Coening Meijer
Description: Zagen des avonds ten 9 uur eene plek, eveneens verlicht als of er eene bank was, waarop het zwaar brandde; zeilden er gedurende 5 min. door heen. Eene puts vol opgehaald water bleef schitteren.
Reported In: Tim Wyatt, Unpublished Notes/Paper
Approx Location: Java
Confidence In Sighting: High Confidence

1.13 Christmas Island 1857 A

Observation Start Date: 07/22/1857
Observation Start Hour: 19:00 LOC
Observation End Date: 07/22/1857
Observation End Hour: 23:00 LOC
Approximate Lat: 14 deg 00' S
Approximate Lon: 105 deg 00' E
Observing Ship/Sensor: Eersteling
Observor(s): A. P. Armstrong, Captain
Description: Ten 7 uur's avonds kreeg het zeewater eene melkachtige kleur, dat in meerdere en mindere mate aanhield tot 11 uur; somtijds was het zoo erg, dat er geen onderscheid tusschen lucht en water te zien was.
Reported In: Tim Wyatt, Unpublished Notes/Paper
Approx Location: Christmas Island
Confidence In Sighting: High Confidence

1.14 Christmas Island 1857 B

Observation Start Date: 09/16/1857
Observation Start Hour: 21:00 LOC
Observation End Date: 09/16/1857
Observation End Hour: (?)
Approximate Lat: 13 deg 00' S
Approximate Lon: 105 deg 00' E
Observing Ship/Sensor: Zeelandia
Observor(s): W. Blaakhert
Description: Heden avond ten 9 uur was het water zoo wit als sneeuw.
Reported In: Tim Wyatt, Unpublished Notes/Paper
Approx Location: Christmas Island
Confidence In Sighting: High Confidence

1.15 Christmas Island 1857 C

Observation Start Date: 09/21/1857
Observation Start Hour: (?)
Observation End Date: 09/21/1857
Observation End Hour: (?)
Approximate Lat: 14 deg 00' S
Approximate Lon: 104 deg 00' E
Observing Ship/Sensor: Antoinette Seraphine
Observor(s): A. Viëtor
Description: Nadat het donker geworden was, nam het zeewater eene witte malkachtige kleur aan, zooals ik het vroeger in den Z. Atl. Oceaan had waargenomen, in de nabijheid van de Kaap de Goede Hoop. -- Toen dacht ik over eene bank gezeild te zijn, nu was het een lage nvel, die op het water scheen te liggen.
Reported In: Tim Wyatt, Unpublished Notes/Paper
Approx Location: Christmas Island
Confidence In Sighting: High Confidence

1.16 Angola 1857

Observation Start Date: 11/17/1857
Observation Start Hour: (?)
Observation End Date: 11/17/1857
Observation End Hour: (?)
Approximate Lat: 14 deg 00' S
Approximate Lon: 13 deg 00' E
Observing Ship/Sensor: Jacqueline en Elise
Observor(s): B. Sikkens
Description: Dikke lucht, fijne regen, plotseling werd de zee, zoo ver het oog reikte, zoo wit als melk; het vuurde niet maar 't was bijna effen wit.
Reported In: Tim Wyatt, Unpublished Notes/Paper
Approx Location: Angola
Confidence In Sighting: High Confidence

1.17 Christmas Island 1857 D

Observation Start Date: 11/19/1857
Observation Start Hour: 20:00 LOC
Observation End Date: 11/19/1857
Observation End Hour: (?)
Approximate Lat: 17 deg 00' S
Approximate Lon: 105 deg 00' E
Observing Ship/Sensor: Jan Schouten
Observor(s): J. Coening Meijer
Description: Ten 8 uur hadden wij een vreemd en onaangenaam schouwspel -- ne eene bui werd het water eensklaps wit en deelde zulks meê aan de lucht; het was niet donker en toch kon men geen onderscheid tusschen lucht en water zien, beide hadden een dof en wit aanzien; de zee werd slechter.
Reported In: Tim Wyatt, Unpublished Notes/Paper
Approx Location: Christmas Island
Confidence In Sighting: High Confidence

1.18 Gulf of Tehuantepec 1859

Observation Start Date: 11/19/1859
Observation Start Hour: (?)
Observation End Date: 11/19/1859
Observation End Hour: (?)
Approximate Lat: 15 deg 55' N
Approximate Lon: 94 deg 51' W
Observing Ship/Sensor: Sonora
Observor(s): Baby, Captain
Description: [...] A very curious phenomena was observable as the ship entered the Gulf [of Tehuantepec] about twilight, and it continued for some 15 miles. The sea was the color of milk, as far as the eye could reach. The paddles, or the rudder even, did not discolor it, nor turn up a single point of the luminous phosphorescence with which the ship's path had been marked for several preceding nights. Captain Baby mentioned that patches and streaks of this "milky sea" he had occasionally seen, but never anything of the sort on so large a scale before. On drawing up a bucket-full of water, it presented no unusual appearance; under a powerful glass, however, it was found to be all alive with animalculae. The cause of the phenomenon was presumed, or rather, guessed, to be a great abundance of whale feed,

which convenient theory is not necessarily a very definite or exclusive one.
Reported In: San Francisco Bulletin, Nov. 29, 1859
Approx Location: Gulf of Tehuantepec
Confidence In Sighting: High Confidence

1.19 Banda Sea 1860

Observation Start Date: 08/26/1860
Observation Start Hour: (?)
Observation End Date: 08/27/1860
Observation End Hour: (?)
Approximate Lat: 3 deg 51' S
Approximate Lon: 127 deg 54' E
Observing Ship/Sensor: Capriceuse
Observor(s): M. Trebuchet, Captain
Description: Curious Marine Phenomenon. Captain Trébuchet states that on the night of August 26th, 1860, while tacking to reach Amboyna, lying at about twenty miles E.N.E., he and his crew witnessed the curious spectacle of the Milky Sea, which the Dutch call the Winter Sea, because both the sky and the waters present the apearance of fields covered with snow. The phenomenon lasted from seven p.m. until the return of daylight. They at first attributed it to the reflection of the moon, then only three days old; but, as the appearance continued after the moon had set, this explanation had to be discarded. A bucketful of sea water being drawn up and being and examined, it was found to contain about 200 groups of animalculae of the same thickness (that of a hair) but of different lengths, varying between one and two-tenths of a millimétre, and adhering to each other by tens and twenties, like strings of beads. These insects emitted a fixed liuht similar to that of the firefly or glow-worm; and it was admitted on all hands that the white appearance of the sea could only be attributed to these minute creatures, the numbers of which must therefore exceed all imagination.
Reported In: The British Medical Journal, Vol. 1, No. 4 (Jan. 26, 1861), pp. 86. &. Scientific American, Vol. 4, No. 7 (February 16, 1861), p. 112
Approx Location: Banda Sea
Confidence In Sighting: High Confidence

1.20 Java 1860 A

Observation Start Date: 10/27/1860
Observation Start Hour: 03:00 LOC
Observation End Date: 10/27/1860
Observation End Hour: 05:30 LOC
Approximate Lat: 10 deg 00' S
Approximate Lon: 100 deg 00' E
Observing Ship/Sensor: t Goede Vertrouwen
Observor(s): D. J. Kraan
Description: Heden nacht ten 3 uur werden wij een zonderling verschijnsel in de zee gewaar; zij werd geheel wit, bijna de kleur van melk, zonder dat men iets glinsterends van insecten, zooals gewoonlijk kon bemerken; de lucht was bedekt en donker, zoodat zulks eene zonderlinge vertooning maakte. Ten half vijf verdween het witte water.
Reported In: Tim Wyatt, Unpublished Notes/Paper
Approx Location: Java
Confidence In Sighting: High Confidence

1.21 Java 1860 B

Observation Start Date: 10/27/1860
Observation Start Hour: 18:30 LOC
Observation End Date: 10/27/1860
Observation End Hour: 21:00 LOC
Approximate Lat: 12 deg 00' S
Approximate Lon: 106 deg 00' E
Observing Ship/Sensor: Euterpe
Observor(s): A. Kuiper
Description: Bemerkten heden avond omstreeks 6 uur 30 min., dat het water bijna geheel wit werd; 't was op eenen aanmerkelijken afstand zichtbaar. Bevonden de tempr. van het zeewater 25 deg evenals vroeger; zeilden in hetzelve tot omstreeks 9 uur.
Reported In: Tim Wyatt, Unpublished Notes/Paper
Approx Location: Java
Confidence In Sighting: High Confidence

1.22 Java 1861 A

Observation Start Date: 08/22/1861
Observation Start Hour: (?)
Observation End Date: 08/22/1861
Observation End Hour: (?)
Approximate Lat: 12 deg 00' S
Approximate Lon: 105 deg 00' E
Observing Ship/Sensor: President Plate
Observor(s): J. C. Harten
Description: Heden avond werd het water geheel en al wit; bij het opkomen dar maan was het minder zichtbaar.
Reported In: Tim Wyatt, Unpublished Notes/Paper
Approx Location: Java
Confidence In Sighting: High Confidence

1.23 Java 1861 B

Observation Start Date: 08/25/1861
Observation Start Hour: 19:00 LOC
Observation End Date: 08/25/1861
Observation End Hour: (?)
Approximate Lat: 12 deg 00' S
Approximate Lon: 105 deg 00' E
Observing Ship/Sensor: Maria Veronica
Observor(s): J. S. Schol
Description: Heden avond omstreeks 7 uur ontdekten wij dat het water zoo wit werd als melk.
Reported In: Tim Wyatt, Unpublished Notes/Paper
Approx Location: Java
Confidence In Sighting: High Confidence

1.24 Java 1861 C

Observation Start Date: 09/02/1861
Observation Start Hour: (?)
Observation End Date: 09/03/1861
Observation End Hour: (?)
Approximate Lat: 12 deg 00' S
Approximate Lon: 105 deg 00' E
Observing Ship/Sensor: Azia
Observor(s): F. Molenaar
Description: Heden avond op de 1e wacht hadden wij het zonderlinge verschijnsel, dat het water zoo wit werd als melk -- ten 12 uur 's nachts was het iets donkerder, doch op de D. W. was het tot den dag weer witter, het vuurde niet.
Reported In: Tim Wyatt, Unpublished Notes/Paper
Approx Location: Java
Confidence In Sighting: High Confidence

1.25 Somalia 1864

Observation Start Date: 01/30/1864
Observation Start Hour: 20:00 LOC
Observation End Date: 01/30/1864
Observation End Hour: (?)
Approximate Lat: 2 deg 43' N
Approximate Lon: 51 deg 00' E
Observing Ship/Sensor: CSS Alabama
Observor(s): Raphael Semmes, Captain
Description: At about eight P.M., there being no moon, but the sky being clear, and the stars shining brightly, we suddenly passed from the deep blue water in which we had been sailing, into a patch of water so white that it startled me; so much did it appear like a shoal. (...) The patch was extensive. We were several hours running through it. Around the horizon there was a subdued glare, or flush, as though there were a distant illumination going on, whilst overhead there was a lurid, dark sky, in which the stars paled. The whole face of nature seemed changed, and with but little stretch of the imagination, the Alabama might have been conceived to be a phantom ship, lighted up by the sickly and unearthly glare of a phantom sea, and gliding on under the pale stars one knew not whither.
Reported In: Miller et al. 2021; Memoirs of Service Afloat, During the War Between the States, p. 732
Approx Location: Somalia
Confidence In Sighting: High Confidence

1.26 Java 1864 A

Observation Start Date: 08/03/1864
Observation Start Hour: (?)
Observation End Date: 08/03/1864
Observation End Hour: (?)
Approximate Lat: 12 deg 00' S
Approximate Lon: 105 deg 00' E
Observing Ship/Sensor: Isis
Observor(s): C. L. Torley
Description: De zee was dezen nacht zoo wit als melk; deze verandering schijnt altijd met mist gepaard

te gaan.
Reported In: Tim Wyatt, Unpublished Notes/Paper
Approx Location: Java
Confidence In Sighting: High Confidence

1.27 Java 1864 B

Observation Start Date: 08/10/1864
Observation Start Hour: 19:30 LOC
Observation End Date: 08/10/1864
Observation End Hour: (?)
Approximate Lat: 12 deg 00' S
Approximate Lon: 105 deg 00' E
Observing Ship/Sensor: Willem Daniel
Observor(s): Titus de Meester
Description: Heden avonde ten half zeven nam het water eensklaps een melkwitte kleur aan en zeilden wij met eene 9 mijls vaart, als het ware door eene zee van melk. De lucht is sterrenklaar en de temperatuur der oppervlakte onveranderd.
Reported In: Tim Wyatt, Unpublished Notes/Paper
Approx Location: Java
Confidence In Sighting: High Confidence

1.28 Java 1864 C

Observation Start Date: 08/28/1864
Observation Start Hour: (?)
Observation End Date: 08/28/1864
Observation End Hour: (?)
Approximate Lat: 11 deg 00' S
Approximate Lon: 105 deg 00' E
Observing Ship/Sensor: Zephir
Observor(s): P. Wemmerus
Description: Zagen het zonderlinge verschijnsel, dat de zee zoo wit werd als melk, de lucht is heiig in dekimmen, in top helder.
Reported In: Tim Wyatt, Unpublished Notes/Paper
Approx Location: Java
Confidence In Sighting: High Confidence

1.29 South Atlantic 1866

Observation Start Date: 04/19/1866
Observation Start Hour: (?)
Observation End Date: 04/19/1866
Observation End Hour: (?)
Approximate Lat: 35 deg 30' S
Approximate Lon: 19 deg 00' W
Observing Ship/Sensor: Maria Anna
Observor(s): J. D. van Monnom
Description: Zeilden 's nachts op de H. W. gedurende 1/4 uur door wit gekleurd zeewater. De zee was zoo glad als een spiegel en geheel wit van schuim; men hoorde niets van de zee noch van de vaart van

het schip.
Reported In: Tim Wyatt, Unpublished Notes/Paper
Approx Location: South Atlantic
Confidence In Sighting: High Confidence

1.30 Banda Sea 1866

Observation Start Date: 08/04/1866
Observation Start Hour: (?)
Observation End Date: 08/04/1866
Observation End Hour: (?)
Approximate Lat: 4 deg 30' S
Approximate Lon: 124 deg 00' E
Observing Ship/Sensor: ZM Metalen Kruis
Observor(s): E. M. C. Baak, Captain
Description: Bevonden gedurende twee nachten, dat de kleur der zee geheel wit was; naarmate de maan hooger kwam, werd de lucht helder blauw en hield het verschijnsel der zee op. Temperatuur en dichtheid van het water bleef onveranderd.
Reported In: Tim Wyatt, Unpublished Notes/Paper
Approx Location: Banda Sea
Confidence In Sighting: High Confidence

1.31 Java 1869 A

Observation Start Date: 08/03/1869
Observation Start Hour: 19:00 LOC
Observation End Date: 08/04/1869
Observation End Hour: 02:00 LOC
Approximate Lat: 12 deg 56' S
Approximate Lon: 115 deg 24' E
Observing Ship/Sensor: Graaf van Hoogendorp
Observor(s): E. W. Fabritius
Description: Zeilden van's avonds 7 tot des nachts 2 uur door helder en flauw wit gekleurd water, waarin groote stukken phosphoor dreven. In het hevigst van 't verschijnsel was de zee bijzonder effen, men hoorde niets, 't was of men door olie zeilde; temperatuur en gewicht van het water hadden geen verschil met de voorgaanda waarneming.
Reported In: Tim Wyatt, Unpublished Notes/Paper
Approx Location: Java
Confidence In Sighting: High Confidence

1.32 Java 1869 B

Observation Start Date: 08/30/1869
Observation Start Hour: (?)
Observation End Date: 08/30/1869
Observation End Hour: (?)
Approximate Lat: 12 deg 11' S
Approximate Lon: 113 deg 48' E
Observing Ship/Sensor: (?)
Observor(s): Jan Lels

Description: Naar aanleiding van het door den Heer N. van Wyck Jurriaanse medegedeelde over de waterverkleuring bij Socotra, laat ik volgen een extract uit mijn dagboek, gehouden op eene reis met een zeilschip naar Soerabaya. 30 Aug. 1869. Heden 12 uur waren wij op 12 gr 11' Z.B. en 113 gr 48' O.L. Wij maakten op de achtermiddag en platvoetwachten naar gissing totaal 14 mijl en bevonden ons des avonds 7 uur op 11 gr 20' Z. Br., daar wij steeds N. t. O. hadden gestuurd. Juist waren wij gereed met schasten, toen de kapitein, die reeds aan dek was, door de kerkkap waarschuwde, dat het witte water vooruit zichtbaar was. Ik had over dit verschijnsel door den kapitein en stuuman dikwijls hooren spreken, doch zij zelven hadden het zoo zelden gezien, dat ik niet had durven hopen, het juist op deze reis waar te nemen. Aan dek gekomen zag ik, dat het water verkleurd was, even alsof het met melk vermenge ware. Langzamerhand werd het witter, totdat het na verloop van tiem minuten juist was, alsof wij door melk voeren, terwijl het schuim op de koppen der golven niet meer te onderscheiden was. De lucht was betrokken en scheen, in tegenstelling van het onmetelijke melkwiite vlak der ons omringende zee, nog dubbel zoo donker. Aan dek was het licht en kon men zonder moeite lezen. Ik liet met de boegpomp een puts met water vullen en ofschoon dit niet zoo wit van kleur leek als de zee, bemerkte ik toch dat het krioelde van kleine lichtende lichaampjes, die zich snel bewogen. Vermoedende, dat doot het pompen vele dier lichaampjes zich aan den binnenwand van zuigbuis en pomp hadden vastgehect, wilde ik op het achterdek een puts water opslaan, toen ons van het voorschip werd toegeroepen om haast te maken, daar men op een afstand duidelijk de scheiding van het witte water kon zien. Voor wij dan ook den tijd hadden het water op te slaan, waren wij de scheiding gepasseerd en vertoonde de zee zich aanmerkelijk donkerder van kleur. In het water dat toen nog werd opgeslagen, bevonden zich nog duidenden lichtgevende voorweprjes. Achteruit ziende, deed zich de scheiding als een recht elijn van het Westen naar het Oosten voor. Het schip liep 8 mijl en daar wij +/- een half uur lang door het witte water waren gezeild, moet dit ter plaatse ongeveer 4 Eng. mijl breed zijn geweest.
Reported In: Tim Wyatt, Unpublished Notes/Paper
Approx Location: Java
Confidence In Sighting: High Confidence

1.33 Java 1869 C

Observation Start Date: 09/03/1869
Observation Start Hour: (?)
Observation End Date: 09/03/1869
Observation End Hour: (?)
Approximate Lat: 9 deg 29' S
Approximate Lon: 114 deg 32' E
Observing Ship/Sensor: Maria Elisabeth
Observor(s): E. F. Bonjer
Description: Zeilden heden nacht, omtrent 7 mijlen verheid, door water, zot wit als melk, zoodat wij het schuim er somtijds niet op konden zien.
Reported In: Tim Wyatt, Unpublished Notes/Paper
Approx Location: Java
Confidence In Sighting: High Confidence

1.34 Christmas Island 1871

Observation Start Date: 08/21/1871
Observation Start Hour: (?)
Observation End Date: 08/22/1871
Observation End Hour: (?)
Approximate Lat: 10 deg 42' S

Approximate Lon: 105 deg 48' E
Observing Ship/Sensor: Medea
Observor(s): J. Ankringa
Description: bij Christmas eiland. (Ind. Oceaan). Liepen heden ten 11 uur, na 't passeeren van chr. eiland, in melkwit gekleurd zeewater; noch van het schuim dat het schip met 9 mijls vaart maakte, noch van het kielwater was iets te bespeuren; ten half een verdween het plotseling, juist als of het een mistlucht was die door de stijve er somtijds niet op konden zine.
Reported In: Tim Wyatt, Unpublished Notes/Paper
Approx Location: Christmas Island
Confidence In Sighting: High Confidence

1.35 Portugal 1872

Observation Start Date: 08/29/1872
Observation Start Hour: (?)
Observation End Date: 08/29/1872
Observation End Hour: (?)
Approximate Lat: 36 deg 50' N
Approximate Lon: 8 deg 34' W
Observing Ship/Sensor: Conrad
Observor(s): Graadt von Roggen
Description: Sterk vurend water met groote wiite plekken, sommige van 100 meter middellijn. De temp. van het zeewater is 2 gerezen.
Reported In: Tim Wyatt, Unpublished Notes/Paper
Approx Location: Portugal
Confidence In Sighting: Low Confidence

1.36 Socotra 1874 A

Observation Start Date: 07/13/1874
Observation Start Hour: (?)
Observation End Date: 07/14/1874
Observation End Hour: (?)
Approximate Lat: 12 deg 42' N
Approximate Lon: 54 deg 53' E
Observing Ship/Sensor: Princes Amalia
Observor(s): E. W. Fabritius
Description: bij het eiland Socotra, Even voorbij Socotra zagen wij de zee langzamerhand eene witte melkachtige kleur krijgen; ten 9 uur was de zee zot wit als melk, zoo dat kim en lucht er zwart bij afstaken; bepaald vuren was het niet, de temp. was ook nagenoeg als te voren en bedroeg, toen de zee het witst was 24.2C. Tegen 11 uur nam het weer af enmet den morgen was er van het verschijnsel niets meer te zien; den volgenden avond vertoonde het zich op nieuw, doch het was toen var korteren duur.
Reported In: Tim Wyatt, Unpublished Notes/Paper
Approx Location: Socotra
Confidence In Sighting: High Confidence

1.37 Socotra 1874 B

Observation Start Date: 08/08/1874
Observation Start Hour: 19:00 LOC

Observation End Date: 08/10/1874
Observation End Hour: 03:00 LOC
Approximate Lat: 13 deg 00' N
Approximate Lon: 55 deg 00' E
Observing Ship/Sensor: Prins van Oranje
Observor(s): T. J. Aukes
Description: Heden avond ten 8 uur werd het water plotseling zoo wit als sneeuw, bevonden geen verschil van temperatuur. Deze witte kleur van het water behielden wij, behalve over dag, tot op de H. W. van den 10den Aug. en toen wij er ten 3 uur uitliepen, konden wij duidelijk eene scherpe acsheiding zien tusschen dit wit en het gewoon gekleurde zeewater.
Reported In: Tim Wyatt, Unpublished Notes/Paper
Approx Location: Socotra
Confidence In Sighting: High Confidence

1.38 Christmas Island 1875

Observation Start Date: 08/08/1875
Observation Start Hour: (?)
Observation End Date: 08/09/1875
Observation End Hour: (?)
Approximate Lat: 12 deg 00' S
Approximate Lon: 105 deg 52' E
Observing Ship/Sensor: Bestevaer
Observor(s): C. v. d. Plas
Description: Zagen heden nacht, van 2 uur tot half vier, het zeewater zoo wit als melk en dne volgenden nacht, na het passeeren van Christmuseiland, hetzelfde, doch voor korten tijd.
Reported In: Tim Wyatt, Unpublished Notes/Paper
Approx Location: Christmas Island
Confidence In Sighting: High Confidence

1.39 Java 1875

Observation Start Date: 10/08/1875
Observation Start Hour: (?)
Observation End Date: 10/08/1875
Observation End Hour: (?)
Approximate Lat: 16 deg 00' S
Approximate Lon: 103 deg 54' E
Observing Ship/Sensor: Oceaan
Observor(s): W. Kramer
Description: Zeilden op he H.W. door zeewater, zoo wit alsof het een sneeuwveld was; bevonden het St. gewicht 1023.5 en de temp 25.5, zijnde twee deelen en twee graden lichter en lager, dan even voor en na, dat wij het witte water hadden.
Reported In: Tim Wyatt, Unpublished Notes/Paper
Approx Location: Java
Confidence In Sighting: High Confidence

1.40 Java 1877 A

Observation Start Date: 09/03/1877
Observation Start Hour: (?)
Observation End Date: 09/03/1877
Observation End Hour: (?)
Approximate Lat: 7 deg 43' S
Approximate Lon: 105 deg 58' E
Observing Ship/Sensor: Noach V
Observor(s): J. C. F. Looijen
Description: Heden nacht, ongeveer voor straat Sunda, was het water aan de oppervlakte wit gekleurd en vuurde het zeer sterk.
Reported In: Tim Wyatt, Unpublished Notes/Paper
Approx Location: Java
Confidence In Sighting: High Confidence

1.41 Java 1877 B

Observation Start Date: 10/08/1877
Observation Start Hour: (?)
Observation End Date: 10/08/1877
Observation End Hour: (?)
Approximate Lat: 7 deg 00' S
Approximate Lon: 105 deg 00' E
Observing Ship/Sensor: Maria Elisabeth
Observor(s): E. F. Bonjer
Description: Heden nacht, bijleggende voor straat Sunda, om den dag af te wachten, was het water zoo wit alsof wij in melk dreven; de lucht was daarentegen zeer donker, zoodat het een opleizierig gezicht opleverde.
Reported In: Tim Wyatt, Unpublished Notes/Paper
Approx Location: Java
Confidence In Sighting: High Confidence

1.42 Arabian Sea 1878

Observation Start Date: 02/09/1878
Observation Start Hour: (?)
Observation End Date: 02/13/1878
Observation End Hour: (?)
Approximate Lat: 12 deg 00' N
Approximate Lon: 56 deg 00' E
Observing Ship/Sensor: L'Armide
Observor(s): Pornain, Lieutenant
Description: A Luminous Sea. Last February the French Ironclad L'Armide passed through a considerable stretch of milky phosphorescenct sea between Point de Galle and Aden. Lieutenant Pornain reports that the nights of February 9, 10, 12, and 13 were characterized by the phenomenon in all its splendor, the ship during this tiem traversing 660 miles (1,100 kilometers) in a mean latitude of 12 deg north, between the meridians of 61 deg and 51 deg east longitude. There was no thunderstorm, the sky was clear, the moon new, the barometer, thermometer, and hygrometer were regular, and a gentle northeast monsoon was blowing. The temperature of the surface of the water was constant at 25 deg. The sea was like a snow covered field in a clear night, and all traces of undulations were lost sight of. The milky

look was hardly disturbed by the motion of the ship and working of the screw (which shows that the layer had considerable thickness). By day all disappeared; but the hue of the sea was somewhat altered. Looked at attentively over the ship's side at night the water was seen to contain an enormous number of luminous particles pressed close together, and more brilliant close to the side (where disturbed). Some four hundreds of these corpuscles, one to two centimeters long, could be counted in a bucket holding ten liters of water. Drawn out, these were seen to be of gelatinous substance, which quickly dried and disappeared, leaving a dark globule one millimeter in diameter, which, in the microscope, presented a transparent ovoid animulcule, filled with eggs, and moving its fins and tentacles incessantly. A drop of water added to the dark globule brought back its luminosity; and when the creature was bruised in hte hand, it gave a bright mark, which was quickly extinguished, and which had no smell. The milky water, kept till day and looked at in the dark, shows no luminosity, even though agitated; nor does the water procured by day and brought into darkness. It remains to be determined what causes the luminosity of those animalcula and information is also desirable as to the position of the various milky seas on the globe, the times of their appearance, whether they persist in the same place or not, etc. Several of the officers on board the Armide had witnessed the phenomenon before, but never so brilliant or so continuous. The Armide, in going out, had passed thirty leagues further north in February, 1878, without encountering anything of the kind.
Reported In: Scientific American, Vol. 42, No. 23 (June 5, 1880), pp. 359-360
Approx Location: Arabian Sea
Confidence In Sighting: High Confidence

1.43 North Atlantic 1878

Observation Start Date: 02/24/1878
Observation Start Hour: (?)
Observation End Date: 02/25/1878
Observation End Hour: (?)
Approximate Lat: 9 deg 11' N
Approximate Lon: 28 deg 30' W
Observing Ship/Sensor: Zeenimph
Observor(s): A. Behrens
Description: Zeer sterk vurend water, de zee gelijkt een sneeuwveld en schip en zeilen zijn als geillumineerd; de zee schijnt met heldere witte puntjes als bezaaid, doch in het opgeslagen water is met de microscoop niets te zien.
Reported In: Tim Wyatt, Unpublished Notes/Paper
Approx Location: North Atlantic
Confidence In Sighting: High Confidence

1.44 Socotra 1879

Observation Start Date: 08/15/1879
Observation Start Hour: (?)
Observation End Date: 08/15/1879
Observation End Hour: (?)
Approximate Lat: 12 deg 08' N
Approximate Lon: 55 deg 52' E
Observing Ship/Sensor: Prins Hendrik
Observor(s): M. C. Braat
Description: Liepen eensklaps in melkwit gekleurd water; schepten er een flesch vol van op en bemerkten dat het vol was van infusie-diertjes van +/- 1 mm lengte.

Reported In: Tim Wyatt, Unpublished Notes/Paper
Approx Location: Socotra
Confidence In Sighting: High Confidence

1.45 Christmas Island 1879

Observation Start Date: 08/27/1879
Observation Start Hour: (?)
Observation End Date: 08/28/1879
Observation End Hour: (?)
Approximate Lat: 10 deg 12' S
Approximate Lon: 105 deg 40' E
Observing Ship/Sensor: Noach V
Observor(s): J. van Schelven
Description: In den nacht voor en na het passeeren van Christmuseiland, in den Ind. Oceaan, was het zeewater, bij heldere sterrenlcuht zonder één wolkje, zoo wit als melk.
Reported In: Tim Wyatt, Unpublished Notes/Paper
Approx Location: Christmas Island
Confidence In Sighting: High Confidence

1.46 Arabian Sea 1879

Observation Start Date: 08/27/1879
Observation Start Hour: (?)
Observation End Date: 08/27/1879
Observation End Hour: (?)
Approximate Lat: 11 deg 49' N
Approximate Lon: 59 deg 48' E
Observing Ship/Sensor: Gelderland
Observor(s): G. J. Boon
Description: Stoomden twee uren door geheel wit gekleurd zeewater.
Reported In: Tim Wyatt, Unpublished Notes/Paper
Approx Location: Arabian Sea
Confidence In Sighting: High Confidence

1.47 Red Sea 1879

Observation Start Date: 08/27/1879
Observation Start Hour: (?)
Observation End Date: 08/27/1879
Observation End Hour: (?)
Approximate Lat: 15 deg 44' N
Approximate Lon: 41 deg 36' E
Observing Ship/Sensor: Koning der Nederlanden
Observor(s): A. G. M. Bruins
Description: Zagen heden avond groote melkwitte vlekken in het water.
Reported In: Tim Wyatt, Unpublished Notes/Paper
Approx Location: Red Sea
Confidence In Sighting: Low Confidence

1.48 Gulf of Aden 1879

Observation Start Date: 10/22/1879
Observation Start Hour: (?)
Observation End Date: 10/22/1879
Observation End Hour: (?)
Approximate Lat: 12 deg 26' N
Approximate Lon: 46 deg 07' E
Observing Ship/Sensor: Princes Marie
Observor(s): H. Hissink
Description: Witte plekken in het zeewater.
Reported In: Tim Wyatt, Unpublished Notes/Paper
Approx Location: Gulf of Aden
Confidence In Sighting: Low Confidence

1.49 Socotra 1880

Observation Start Date: 08/07/1880
Observation Start Hour: (?)
Observation End Date: 08/07/1880
Observation End Hour: (?)
Approximate Lat: 13 deg 20' N
Approximate Lon: 53 deg 30' E
Observing Ship/Sensor: Drente
Observor(s): J. de Jong
Description: Wit gekleurd water.
Reported In: Tim Wyatt, Unpublished Notes/Paper
Approx Location: Socotra
Confidence In Sighting: High Confidence

1.50 Timor Sea 1880

Observation Start Date: 08/31/1880
Observation Start Hour: (?)
Observation End Date: 08/31/1880
Observation End Hour: (?)
Approximate Lat: 10 deg 47' S
Approximate Lon: 119 deg 10' E
Observing Ship/Sensor: A. & W. C.
Observor(s): H. de Jonge
Description: Zagen op de H.W. gedurende twee uren, terwijl het schip eene 5-mijls varrt liep, het zeewater zoo wit als melk; de lucht, alhoewel vrij helder, kwam er donker tegen uit. Lieten, nadat wij met de zeilen manouvreerende, de vaart tot een minimum hadden beperkt, het lood vallen, doch kregen met 80 vadem geen grond. In het St. gewicht of in de temperatuur van het zeewater werd geene varandering waargenomen.
Reported In: Tim Wyatt, Unpublished Notes/Paper
Approx Location: Timor Sea
Confidence In Sighting: High Confidence

1.51 Arabian Sea 1881

Observation Start Date: 02/01/1881
Observation Start Hour: (?)
Observation End Date: 02/01/1881
Observation End Hour: (?)
Approximate Lat: 14 deg 00' N
Approximate Lon: 53 deg 00' E
Observing Ship/Sensor: SS Sumatry
Observor(s): Dan Pidgeon
Description: I left Bombay for England in January 1881, on board the P. and O. s.s. Sumatray (Captain Briscoe), and on February 1, the vessel being then in N. lat 14 deg and E. long 53 deg (not far from the position described by your correspondent) had an opportunity of witnessing the phenomenon known as the "Milky Sea," rarely seen except in these waters. The following extract from by book, "An Engineer's Holiday," describing and explaining the appearance, may interest Mr. Barrett:- "The whole ocean, from the ship to the visible horizon, looked as if it were covered with snow, whose surface vidently shone by the reflected light of the sky, for Venus, being very bright, threw a distinguishable line of radiance across it, while the phosphorescent crests of waves were now and then seen breaking above the layer of shining matter which overlaid the water.""A current, always encountered north of Socotra, set the ship, on the day in question, fourteen miles to the northward of her course. This stream was crowded with large medusae, visible not only during the day, but also at night, whem being themselves non luminous, they appeared as whirling black discs in the general phosphorescence of the ship's wake. The ship's officers fully believed that this current brings with it, besides jelly fish, enormous quantities of decayed and phosphorescent matter to whose presence they attributed the appearance of the 'Milky Sea.' "The fact however, that the seeming snow reflects light, and is broken through by quite small waves, disposed of this explanation, and we soon convinced ourselves that the phenomenon is really due to a thin layer of mist lying on the water, exactly resembling one of those local fogs which every one has seen, and which may give to avalley or even a slight depression the appearance of being snowed up. It occurs when the sea is colder than the atmosphere, and the latter still and heavily loaded with aqueous vapour. Under these circumstances, a layer of air immediately in contact with the water is chilled below the dew point and becomes mistuy, while that above remains transparent: the upper surface of such a fog, which is only a few inches thick, being seen by the reflected light of the sky" ("An Engineer's Holiday," vol. ii. p. 314). The temperature of the sea on the night in question was 70 deg F., while that of the air was 79 deg, an unusual amount of difference in the Arabian Sea. Water, brought on deck by a bucket, showed no signs of milkiness, though crowded as ususal with various phosphorescent organisms. Dan Pidgeon. The Long House, Letherhead, September 24.
Reported In: Nature, 58, 520-521, September 29, 1898
Approx Location: Arabian Sea
Confidence In Sighting: High Confidence

1.52 Socotra 1882

Observation Start Date: 08/12/1882
Observation Start Hour: 21:00 LOC
Observation End Date: 08/13/1882
Observation End Hour: 00:30 LOC
Approximate Lat: 12 deg 45' N
Approximate Lon: 53 deg 50' E
Observing Ship/Sensor: Diodem
Observor(s): Jackson, Captain
Description: whilst steaming along the north coast of the island of Socotra, about five miles from land, on the 12th August, 1882, at 9 p.m., the night being dark and hazy and no moon visible, noticed that

the sky to the eastward suddenly brightened as by a rising moon, and that a thin luminous streak had made its appearance upon the horizon stretching north to south. This gradually widened as the ship steamed towards it, and about 9.30 the ship passed almost instantaneously from the usual sea water into what appeared a sea of milk. Captain Jackson describes at length the effect produced, and speaks of the water as being "luminous" as well as "milky." The vessel was completely surrounded by the luminous water, which made the sky appear of inky blackness above, and gave the sea, which was really at the time moderately rough, the appearance of a dead calm. The ship appeared to be stopped. Small pieces of seaweed floating past stood out dark and clearly defined in the water, and could be distinctly seen and distinguished some sixty yards away. That lasted until about 12.30 a.m., when the ship passed out of it again almost as suddenly as she had entered it, and the sea and the sky were as before. At 10.30, and when the sea was at its brightest, three bucketsful of water were drawn from over the side, and then carefully strained through a milk handkerchief, the luminous residue being carefully lifted out with a tablespoon and put into a bottle with about three glasses of whiskey. That was the bottle sent to me by Mr. Moore. Captain Jackson further notes that the luminosity was not confined to the surface, since the water brought up by the deck-pump, the suction-pipe of which entered the sea at a depth of about twenty feet, was exactly the same as that drawn in the buckets, "except that the luminous bodies were all broken up in their passage through the pump."
Reported In: Proceedings of the Literary and Philosophical Society of Liverpool, During the Seventy Second Session, 1882-88 XXXVII., pp. 71-73
Approx Location: Socotra
Confidence In Sighting: High Confidence

1.53 Somalia 1886

Observation Start Date: 09/05/1886
Observation Start Hour: (?)
Observation End Date: 09/05/1886
Observation End Hour: (?)
Approximate Lat: 6 deg 03' N
Approximate Lon: 53 deg 34' E
Observing Ship/Sensor: Soenda
Observor(s): F. W. Soomer
Description: Licht vurend water, de zee voor 1/2 uur effen en zoo wit als melk.
Reported In: Tim Wyatt, Unpublished Notes/Paper
Approx Location: Somalia
Confidence In Sighting: High Confidence

1.54 Arabian Sea 1887

Observation Start Date: 09/16/1887
Observation Start Hour: (?)
Observation End Date: 09/16/1887
Observation End Hour: (?)
Approximate Lat: 12 deg 33' N
Approximate Lon: 58 deg 11' E
Observing Ship/Sensor: Burgemeester den Tex
Observor(s): A. G. M. Bruins
Description: Melkachtig gekleurd zeewater, veroorzaakt door infusiediertjes.
Reported In: Tim Wyatt, Unpublished Notes/Paper
Approx Location: Arabian Sea

Confidence In Sighting: High Confidence

1.55 Indian Ocean 1897

Observation Start Date: 08/22/1897
Observation Start Hour: 01:30 LOC
Observation End Date: 08/22/1897
Observation End Hour: 04:15 LOC
Approximate Lat: 10 deg 35' N
Approximate Lon: 63 deg 25' E
Observing Ship/Sensor: SS Indian Endeavour
Observor(s): James W. Barrett
Description: During the recent voyage of the P. and O. Co. s.s. India to London I had an opportunity (owing to the kindness of Captain Worcester) of witnessing what seems to be a rare phenomenon. The commander had seen it two or three times in the course of his experience. No one else on board knew anything about it, and I should be glad of a reference to any detailed description. At 1.30 a.m. on the morning of August 22, in the Indian Ocean, the officer in charge saw ahead what seemed to be a low mist, and into which the vessel steamed. I was called about fifteen minutes later. The whole sea was milk-white, much more luminous than the clear, starry sky, and there was a very definite horizon. There was no moon, the wind was south-west and light-the end of the monsoon; and although the sea was, as a matter of fact, breaking here and there, it appeared a calm white sheet only disturbed by the displacement waves near the ship and a very occasional breaker elsehwere; showing through it were occasional flashed of the ordinary brilliant phosphorescence. It will therefore be seen that the luminosity of the "white sea" was rather less than that of a breaking wave with the same illumination. A bucket of water drawn showed nothing unusual. Samples with and without alcohol were preserved. A fireball was thrown overboard, and burnt on the surface of the water; this was done ot see if any fog or mist was present. There was no indication of anything of the kind. On the port side of the ship is an aperture through which the surplus water from the bath tanks if constantly ejected, slightly warmed. This water, as it fell on to the sea, appeared much blacker than the sea, and floated for a few seconds as a black mass; unfortunately, the same shoot is used for the ashes at times. But the ejected water is quite white by daylight. The appearance of the sea lasted about an hour, then faded, then brightened again, and was quite bright at daylight, 4.15 a.m.; so that it was seen throughout a distance of nearly fifty miles. A slight recurrence was observed the following night, when the monsoon was blowing more strongly. At 3 o'clock on the 22nd, in the midst of the "white sea," the latitude was 10 deg 35'N. and the longitude 63 deg 25' E; the temperature of the air was 77 deg F., that of the water 77 deg F. Specific gravity of the water by ship's instrument No. 1314 = 25. I shall be glad to hand over the specimens of water to any one interested. James W. Barrett. 22 Cavendish Square, September 13.
Reported In: Nature, 58, 496-497, September 22, 1898
Approx Location: Indian Ocean
Confidence In Sighting: High Confidence

1.56 Arabian Sea 1898

Observation Start Date: 08/08/1898
Observation Start Hour: (?)
Observation End Date: 08/08/1898
Observation End Hour: (?)
Approximate Lat: 11 deg 00' N
Approximate Lon: 63 deg 30' E
Observing Ship/Sensor: SS Preufsen

Observor(s): (?)
Description: Milchfarbigen Wasser. Zwischen Sokotra and Minikoi und bei Ras Hafun. An Bord des Dampfers "Preufsen" beobachtete man am 8. August 1898, auf der Fahrt von Aden nach Colombo, auf 11 deg N.Br und 63,5 deg O.Lg von 11 Uhr abends bis Mitternacht eince Verfärbung der meeresoberfläche, ähnlich wie wenn man einem Glase Wasser einen tüchtigen Schufs Milch zusetzt. Die Grenzen des varfärbten Wassers waren unabsehbar. Es war zur Zeit heller Mondschein und schönes klares Wetter, der Wind SW 4. Bemerkung. Derartig verfärbtes Wasser scheint, wie auch mit dem berichteten der Fall war, verhähltnifsmäfsig am häufigsten im Arabischen Meere und überhaupt nur in den niederen Breiten des Indischen Ozeans vorzukommen.
Reported In: Tim Wyatt, Unpublished Notes/Paper
Approx Location: Arabian Sea
Confidence In Sighting: High Confidence

1.57 Somalia 1898

Observation Start Date: 08/16/1898
Observation Start Hour: (?)
Observation End Date: 08/19/1898
Observation End Hour: (?)
Approximate Lat: 04 deg 30' N
Approximate Lon: 50 deg 00' E
Observing Ship/Sensor: SS Bundesrath
Observor(s): Asthausen, Captain
Description: Im Journal des Reichspost dampfers "Bundesrath", Kapt Asthausen, wird berichtet: "Auf der Reise von Aden nach Mombassa, Ostafrika, zeigte das Meerwasser vom 16. bis zum 19. August 1898, zwishcen 9 deg N-Br, 51,8 deg O-Lg und 0 deg Breite, 48,5 deg O-Lg, nachts ein milchartiges Aussehen mit leuchtendem Schein, ähnlich wie auf seichtem Wasser, nur dafs es leuchtete." Wind SW 6 bis 5, Himmel leicht bewölkt oder klar.
Reported In: Tim Wyatt, Unpublished Notes/Paper
Approx Location: Somalia
Confidence In Sighting: High Confidence

1.58 Arabian Sea 1915

Observation Start Date: 07/31/1915
Observation Start Hour: 16:05 MGT
Observation End Date: 07/31/1915
Observation End Hour: 17:10 GMT
Approximate Lat: 15 deg 38' N
Approximate Lon: 59 deg 06' E
Observing Ship/Sensor: SS Islami
Observor(s): (?)
Description: 31st Jul. 1915. 1605 to 1710 GMT. Passed through a patch of dazzling white phosphorescence some 3 miles long; it appeared brightest at 1620. Sea temp. 76 deg F. Posn: 15 deg 38'N, 59 deg 06'E.
Reported In: E.W. Barlow's Records
Approx Location: Arabian Sea
Confidence In Sighting: High Confidence

1.59 Arabian Sea 1921 A

Observation Start Date: 07/29/1921
Observation Start Hour: 19:20 LOC
Observation End Date: 07/30/1921
Observation End Hour: 03:30 LOC
Approximate Lat: 12 deg 36' N
Approximate Lon: 54 deg 45' E
Observing Ship/Sensor: SS Arracan
Observor(s): W. T. Hamilton, Captain
Description: On July 29th, 1921, at 7.20 p.m., S.S. Arracan, Captain W. T. Hamilton, approaching the east end of Sokotra from Rangoon, reports having "observed abnormal brightness in sea, apparently due to phosphorescent action in the water. The whole surface of the water was brilliantly lit up, giving the sea a milky white appearance. The horizon around was exceptionally clear cut, and the whiteness of the sea gave the sky an inky black appearance, although the sky was quite clear and cloudless and the stars were shining brightly. The phenomena lasted until 3.30 a.m. of the following morning.
Reported In: Mar. Obs. 1926, 11, Vol III, no 35
Approx Location: Arabian Sea
Confidence In Sighting: High Confidence

1.60 Arabian Sea 1921 B

Observation Start Date: 08/26/1921
Observation Start Hour: 21:30 LOC
Observation End Date: 08/26/1921
Observation End Hour: 23:00 LOC
Approximate Lat: 12 deg 49' N
Approximate Lon: 57 deg 04' E
Observing Ship/Sensor: SS City of Brisbane
Observor(s): Mr. Zeal
Description: Mr. Zeal of the S.S. City of Brisbane, also communicated that on August 26th, 1921, at 9.30 p.m. in Latitude 12 deg 49' N., Longitude 57 deg 04' E. the ship steamed into a field of what looked like milk. The night was bright and starlight, and previous to encountering this there was a strong monsoon wind (S.S.W.) blowing and a rough sea running. On entering this field of whiteness the sea seemed to moderate considerably, although the vessel's speed did not seem to be reduced. The sea became normal again at 11 p.m., the ship then being in Latitude 12 deg 33' N., Longitude 56 deg 49' E. and the previous monsoon weather continued until Sokotra was reached.
Reported In: Mar. Obs. 1926, 11, Vol III, no 35
Approx Location: Arabian Sea
Confidence In Sighting: High Confidence

1.61 Somalia 1925 A

Observation Start Date: 08/01/1925
Observation Start Hour: 00:00 LOC
Observation End Date: 08/01/1925
Observation End Hour: 03:00 LOC
Approximate Lat: 9 deg 40' N
Approximate Lon: 62 deg 10' E
Observing Ship/Sensor: SS Clan Malcolm
Observor(s): (?)

Description: August 1st 1925, 00 a.m. to 3 a.m. "Steamed through an area of remarkably luminous sea, causing the effect of pale moonlight. Apparently due to phosphorescence well below the surface. The steamer's wake and wave crests were not even visible. The horizon was very distinct.
Reported In: Mar. Obs. 1926, 08, Vol III, no 32
Approx Location: Somalia
Confidence In Sighting: High Confidence

1.62 Somalia 1925 B

Observation Start Date: 08/08/1925
Observation Start Hour: 20:55 LOC
Observation End Date: 08/08/1925
Observation End Hour: 21:10 LOC
Approximate Lat: 11 deg 39' N
Approximate Lon: 60 deg 47' E
Observing Ship/Sensor: SS Malda
Observor(s): R. F. Weatherseed, Third Officer
Description: On the passage from Aden to Colombo and after passing north of Sokotra, we experienced a strong S.W. Monsoon until we arrived in Latitude 11 deg 39'N, Longitude 60 deg 47'E., on August 8th, 8.35 p.m., when the ship was enveloped in a thick haze; at 8.35 p.m. the haze lifted and the appearance of the sea was a milky white, the horizon was dense black, wind and sea had dropped and merely the swell remained. The moon had not risen, at 9.10 p.m., the sea again appeared normal. The conditions from then to Colombo were gentle to moderate westerly winds. The vessel's speed was 12.5 knots.
Reported In: Mar. Obs. 1926, 08, Vol III, no 32
Approx Location: Somalia
Confidence In Sighting: High Confidence

1.63 Somalia 1925 C

Observation Start Date: 08/13/1925
Observation Start Hour: 17:50 GMT
Observation End Date: 08/14/1925
Observation End Hour: 16:43 GMT
Approximate Lat: 12 deg 38' N
Approximate Lon: 55 deg 28' E
Observing Ship/Sensor: SS Somersetshire
Observor(s): P. Hawkins, Second Officer
Description: At 9.20 p.m. August 13th, 1925 (1750 G.M.T.), when steering S. 78 deg E., speed 10 1/2 knots; in Latitude 12 deg 38' N., Longitude 55 deg 28' E., on a bright, starlight moonless night, wind S.W. by S., force 5; swell south, rough, the horizon to the eastward suddenly became very clear, and a white line seemed to be coming towards the ship at a tremendous speed from the eastward, which had the appearance of breakers; very shortly after, the whole sea was quite white, with now and again circular and streaky black patches, and the whole surroundings were brilliantly lighted up. The sea was so white that one was not able to distinguish the ship's wake nor the wash of the water against the ship's side. During this time (9.20 p.m. till 10.40 p.m.) the atmospheric conditions were extraordinary, no sound was heard, not even the wind nor the breaking of the sea, no swell was visible, and the vessel, which had previously been rolling heavily, had practically no movement on her: in fact, one could almost have imagined the vessel was in dock. During the time the vessel was in this white water there appeared to be at an altitude from the hoirzon of about 10' pitch black clouds, wheras there were no clouds at all. At 10.15 p.m. a sample of sea water was taken, Temp. 75 deg, Specific Gravity 25, and contained

quantities of phospheric particles in various shapes, some of the threads ranging from 1/4 inch to 1 inch long. At 10.30 p.m. the sea to the westward gradually became normal again, but that to the eastward was still white. At 11.00 p.m. the whole of the sea became normal, the whiteness just disappearing very gradually. On August 14th, 8.30 p.m. (1643 G.M.T.), in Latitude 11 deg 40' N., Longitude 59 deg 23' E. Luminous water was again seen. Particulars much the same, except that on this occasion the whiteness of the water, which was even brighter than the night before, only lasted 20 minutes and disappeared suddenly. As the vessel came out of the white water into normal coloured water, one could see a very distinct line between the two, and on looking astern, it had the appearance of a vessel coming out of a dense fog. Particulars as follows: Wind S.W. by S., force 4, sea S.W. by S., 4. Swell S.S.W. Mod. Temp., dry bulb 78 deg, wet bulb 74.9 deg, sea 77 deg. Specific Gravity 25.5. Barometer 1007.b mbs.
Reported In: Mar. Obs. 1926, 08, Vol III, no 32
Approx Location: Somalia
Confidence In Sighting: High Confidence

1.64 Socotra 1925

Observation Start Date: 08/17/1925
Observation Start Hour: 19:05 LOC
Observation End Date: 08/17/1925
Observation End Hour: (?)
Approximate Lat: 12 deg 30' N
Approximate Lon: 54 deg 45' E
Observing Ship/Sensor: SS Karimata
Observor(s): J. A. Brouwer, Captain; J. Van Essen, Fourth Officer
Description: Aan het metorologisch jounaal no. 1181 van het s.s. "Karimata", gezagvoerder de heer J. A. Brouwer, bijgehouden door den 4den officier J. van Essen, wordt het volgende ontleend: Eenige malen werd zeer graai een z.g. melkzee waargenomen; hieronder wolgen eenige bijzonderheden daaromtent. Na het passeeren van Ras Radressa-Sokotra nam de harde Z.W. moesson geleidlijk af, evenals zee en deining. Op de P.V. d.d. 17 Aug. 1925 te 7.05 werd plotseling helderwiite waterdamp waargenomen, die zeer snel hoogen en hooger kwam. Te 7.15 werd het minder geworden zicht weder beter. De zee werd sterk lichtgevend en daarna melkachtig van kleur. De temperatuur van het zeewater daalde van 27 gr tot 24.2 gr, terwijl die der buitenlucht 25 gr was. De verdere wacht bleef het zeer fraaie verschijnsel aanhouden, doch de zeewatertemperatuur steed inmiddels weder tot 27 gr. Het zicht was zeer goed; speciaal de scheiding tusschen water en de bijzonder heldere lucht aan S.B. was uiterst scherp; als een zwarte streep teekende de lucht zich tegen het als matglas uitziende water af. Aan B.B. was het zicht iets minder. Het helderwitte schijnsel begon op de E.W. iets af te nemen, terwijl te 8.30 aan de zuidelijke kim een streep gewoon donker water te zien was, die langzaam doorzette en verdween. Te 8.35 kwam recht vooruit en aan weerszijden vooruit weden een zwarte streep water in het zicht, die steeds breeder werd, terwijl te 8.42 de tamelijk scherpe afscheiding tusschen lichtgevend en gewoon water werd gepasseerd; de richting van deze grenslijn was van N.N. O. tot Z.Z.W., van kim tot kim. Het water bleef daarna af en toe sterk vurende. Den volgenden dag op de P.V. was het water weder sterk vurend en op de E.W. stoomden we weder door een melkachtig gekleurde zee, waarvan de temperatuur 26 gr was. Van 8.25-9.00 nam het verschijnsel geleidelijk af en toe, om vervolvgens te verdwijnen; het opvallende nu was, dat slechts het zeewater aan lij sterk vuurde, welk verschijnsel vele malen werd waargenomen. Aan het einde der wacht herhaalde de melkachtige kleur zich weden en op de H.W. werd daarna het navolgende waargenomen. Fraai weer. Licht W.Z.W. koelte. Zeer heldere lucht. Licht Z.W. deining. Temperatuur buitenlucht 26.2 gr. Die van hee zeewater 25.5 gr. Water rondom van kim tot kim melkachtige kleur. Bijzonder scherpe scheiding tusschen water en lucht. Zicht zeer goed (zulks was te beoordeelen aan eenige schepen die in het zicht kwamen). Ten I uur minder wordende kim en afnemende kleur. Het plaatselijk vurende water sterker. Ten 1.15 was alles verdwenen. Ten 3 uur passeerden we wederom een witachtige zee. Langs de zuidelijke kim vertoonde zich een donkere strook water, terwijl langs de noordelijke kim een

zilverwitte streep te zien was. Verdere kleur van het water als van matglas. De temperatuur bleek 25.2 gr te zijn. Daarna langzaam verzwakkende kleur met toename van plaatselijk sterk phosphoriseerende plekken.Opgeslagen water bevatte allerei naaldvormige lichtgevende bestanddeelen, ongeveer één cm. lang. Op de D.W. kreeg het water weden een donkere tint; nadien werd het bovengenoemde verschijnsel niet meer waargenomen, doch wel zeer sterk vurend water, echter uitsluitend aan B.B. (lijkant).
Reported In: Tim Wyatt, Unpublished Notes/Paper
Approx Location: Socotra
Confidence In Sighting: High Confidence

1.65 Somalia 1925 D

Observation Start Date: 08/18/1925
Observation Start Hour: (?)
Observation End Date: 08/21/1925
Observation End Hour: (?)
Approximate Lat: 10 deg 00' N
Approximate Lon: 65 deg 00' E
Observing Ship/Sensor: SS Port Hunter
Observor(s): C.F. Post, Third Officer
Description: During the night watches on August 18th, 19th, 20th, and 21st, 1925 between Latitude 10 deg N, Longitude 65 deg E and Latitude 13 deg N., Longitude 50 deg E., most extraordinary phosphorescence in the sea was observed. The sea became luminous from horizon to horizon each evening between 8.30 p.m. and 9.00 p.m., and disappeared in the morning about an hour before daylight. It gave an effect of the ship sailing in a sea of milk, and at times was very bright, and it was possible to read Azimuth Tables on the bridge by the light, usually between the hours of 2 a.m. to 4 a.m. The horizon sharp and distinct except for a point each side of magnetic north.
Reported In: Mar. Obs. 1926, 08, Vol III, no 32
Approx Location: Somalia
Confidence In Sighting: High Confidence

1.66 Somalia 1925 E

Observation Start Date: 08/19/1925
Observation Start Hour: 19:20 LOC
Observation End Date: 08/19/1925
Observation End Hour: 20:20 LOC
Approximate Lat: 10 deg 35' N
Approximate Lon: 59 deg 11' E
Observing Ship/Sensor: SS Clan Malcolm
Observor(s): (?)
Description: August 19th, 1925, 7.20 p.m. to 8.20 p.m. Conditions similar to above [the August 1st encounter by the same boat] but less brilliant
Reported In: Mar. Obs. 1926, 08, Vol III, no 32
Approx Location: Somalia
Confidence In Sighting: High Confidence

1.67 Somalia 1925 F

Observation Start Date: 08/20/1925
Observation Start Hour: 00:30 LOC

Observation End Date: 08/20/1925
Observation End Hour: 01:30 LOC
Approximate Lat: 13 deg 00' N
Approximate Lon: 54 deg 56' E
Observing Ship/Sensor: SS Oxfordshire
Observor(s): F. C. Brooks, Fourth Officer
Description: At 0.30 a.m. A.T.S. in Latitude 13 deg 00'N, Longitude 54 deg 56' E., the whole sea assumed a curious milky appearance as though light was being projected to the surface by some sobmarine agency. Irregular black streaks resembling spawn were observed. The sea was not breaking and the wind S.W., force 3-4. Barometer 1009 mbs. Air Temperature, 76 deg. Sky cloudless. At 1.30 a.m. the phenomena gradually disappeared and the wind increased to force 6. Sea disturbance 5, vessel having opened the eastern end of the island to the monsoon.
Reported In: Mar. Obs. 1926, 08, Vol III, no 32
Approx Location: Somalia
Confidence In Sighting: High Confidence

1.68 Somalia 1925 G

Observation Start Date: 08/24/1925
Observation Start Hour: 23:00 UNK
Observation End Date: 08/25/1925
Observation End Hour: 03:00 UNK
Approximate Lat: 9 deg 05' N
Approximate Lon: 52 deg 00' E
Observing Ship/Sensor: SS Theseus
Observor(s): J. T. Fettes, Third Officer
Description: August 24th, 1925. 11.00 p.m. Latitude 9 deg 05' N, Longitude 52 deg 00' E. Sea suddenly became luminous. This phosphorescence reached on all sides as far as the horizon, and lasted until 3.00 a.m. 25.8.25. During this period the ship had steamed N. 16 deg W., 36 miles. Unlike the usual appearance of phosphorescence there was no sparkle, as the ship broke the water and none from any water thrown on deck. From the appearance of the water the phosphorescence was thought to be deep down. At first sight this phenomenon made it appear as though the ship had run into shoal water, but a cast gave over 75 gthms. Water temperature, 69 deg F.
Reported In: Mar. Obs. 1926, 08, Vol III, no 32
Approx Location: Somalia
Confidence In Sighting: High Confidence

1.69 South China Sea 1925

Observation Start Date: 08/27/1925
Observation Start Hour: 04:30 UNK
Observation End Date: 08/27/1925
Observation End Hour: (?)
Approximate Lat: 14 deg 00' N
Approximate Lon: 112 deg 00' E
Observing Ship/Sensor: SS Glenamoy
Observor(s): R. L. V. Bishop, Second Officer
Description: August 27th, 1925, 4.30 a.m. in Latitude 14 deg N., Longitude 112 deg E. (aproximately). The weather being gloomy, with steady wind and rain, just ahead appeared a luminous streak of water closely resembling a submerged reef. It proved to be phosphorescence and, as nearly as could be judged,

of only 2 cables extent. As the ship passed through the patch, the water was noted to be of milky appearance, and waves of luminous air seemed to rise above the sea almost to the height of the main deck. Almost immediately the ship passed clear and no further indications were observed elsewhere.
Reported In: Mar. Obs. 1926, 08, Vol III, no 32
Approx Location: South China Sea
Confidence In Sighting: High Confidence

1.70 Timor Sea 1925

Observation Start Date: 08/27/1925
Observation Start Hour: 02:30 UNK
Observation End Date: 08/27/1925
Observation End Hour: 03:05 UNK
Approximate Lat: 8 deg 29' S
Approximate Lon: 128 deg 10' E
Observing Ship/Sensor: HMAS Moresby
Observor(s): Lt. J. Donovan, R.A.N.
Description: At 0230 August 27th, 1925, when in estimated position 8 deg 29' S, 128 deg 10' E., the following unusual phenomenon was observed: The sea suddenly appeared to be illuminated by a soft lambent light as far as the horizon on all sides. At and above the horizon to an elevation of 2 deg there was a dark band of very deep blue, which abruptly faded to an exceptionally light and clear sky. At this time the sky was clear, with brilliant stars, and the moon had set. There was no phosphorescence. Sea surface temperature was 77 deg and Specific Gravity 1011.00. Wind E.S.E., force 3. Sea surface: waves E.S.E., disturbance 4, with a slight easterly swell. The phenomenon lasted until 0305, fading away quickly.
Reported In: Mar. Obs. 1926, 08, Vol III, no 32
Approx Location: Timor Sea
Confidence In Sighting: High Confidence

1.71 South China Sea 1926

Observation Start Date: 02/09/1926
Observation Start Hour: 19:00 UNK
Observation End Date: 02/10/1926
Observation End Hour: 02:15 UNK
Approximate Lat: 18 deg 50' N
Approximate Lon: 113 deg 40' E
Observing Ship/Sensor: SS Kwangtung
Observor(s): (?)
Description: Peculiar state of the sea observed on the night of the 9th February, 1926. Latitude 18 deg 50' N., Longitude 113 deg 40' E. at 7 p.m., Observed a most peculiar colour in the sea. The whole sea from horizon all round appeared as if lighted up from below, making the night quite light instead of being dark owing to the sky being quite overcast. Stratuse, just a few small breaks in the clouds at times. Wind, light N.E.'ly airs. Sea smooth. Swell Nil. The sea appeared to be a very light pale green, no phosphorescence, except a few spots at times, no phosphorescence being stirred up by the wake. Heavy black banks north to west about 5 deg above horizon and from east to south. At 9.15 the N.W. bank passed overhead and the sea became normal. At 10.15 p.m. the same appearance came on again, returning to normal at 2.15 a.m. 10.2.26. Barometer at 8 p.m. 1014.5 mb. Vessel bound to Hong Kong
Reported In: Mar. Obs. 1927, Vol IV, no 38
Approx Location: South China Sea

Confidence In Sighting: High Confidence

1.72 South Atlantic 1926

Observation Start Date: 07/05/1926
Observation Start Hour: 23:15 GMT
Observation End Date: 07/06/1926
Observation End Hour: 00:05 GMT
Approximate Lat: 8 deg 10' S
Approximate Lon: 2 deg 42' W
Observing Ship/Sensor: SS Clan Morrison
Observor(s): L. C. Higgins, Third Officer
Description: On July 5th, 1926, at 2315 G.M.T. while in Latitude 8 deg 10' S., Longitude 2 deg 42' W., observed numerous patches of dull phosphorescence of about 6 to 24 ins. in diameter. At 2355 we commenced to pass through five broad bands of phosphorescence which stretched from N.E. by E. to S.W. by W. as far as the eye could see. The bands were not solid but seemed to be composed of numerous patches similar to the previous ones, some of which were lighter than others. The phosphorescence seemed to make the sea thick and sluggish. It took ten minutes steaming to pass through the five bands a distance of about 2 miles. Weather at the time: Barometer 30.14 ins. Temperature 75 deg. Wind S.E. force 4. Sea S.E. 2. Swell S.S.E. 4, overcast, St.
Reported In: Mar. Obs. 1927, Vol IV, no 43
Approx Location: South Atlantic
Confidence In Sighting: Low Confidence

1.73 Brazil 1926

Observation Start Date: 10/04/1926
Observation Start Hour: 18:30 UNK
Observation End Date: 10/05/1926
Observation End Hour: 07:30 UNK
Approximate Lat: 31 deg 20' S
Approximate Lon: 50 deg 45' W
Observing Ship/Sensor: SS Soctrates
Observor(s): W. E. Jordan, Second Officer
Description: October 4th, 1926 bound to Rio Grande do Sul from Santos. The weather during the day was normal, wind S.E., force 4. Swell S.S.E. 3. Barometer stready around 1025.7 mb., mean temperature of air 62 deg F, water 58 deg F., sky cloudless and exceptionally clear. At 6.30 p.m., beaing abeam of Mostardos Lighthouse, in Latitude 31 deg 20' S, Longitude 50 deg 45' W., light wisps of Cirrus were observed in the zenith moving from W. by S. These, however showed no signs of increasing, but apparently disappeared with coming of dark. At the same time a heavy bank of Cu-Nb and Nb was seen to be banking up from W.S.W. accompanied by vivid fork and sheet lightning. By 8.00 p.m., the sky was completely overcast with heavy Cu-Nb, heavy drops of rain began to fall but ceased after a few minutes. The barometer remained steady at 1025.7 mbs., temperature of air 59 deg. Winds, variable, force 0-3. This prevailed until 10.00 p.m. when the sea became absolutely white with phosphorescence so that the vessel seemed to be moving in a sea of milk, at the same time a curious phenomenon was observed, the sky which was composed of very heavy Cu-Nb appeared to break up and turn absolutely white, looking like white Cumulus clouds in the sunlight and had the general appearance of a gigantic honeycomb extending over the whole vault of the heavens. No stars were visible. At 11.00 p.m., the phosphorescence susbsided to isolated patches on breaking waves. Co-incident with its subsidence the sky again became pitch black, vivid lightning now played across the heavens from all directions, thunder

being heard in the S.W. At midnight the conditions were the same, the barometer steady at 1026.1 mb., air 50 deg, wind N.E., force 0-3, swell S.S.E. 3. Between midnight and 1.00 a.m. a few drops of heavy rain fell and the barometer fell 3.4 mb., in hte hour (1026.1 mb. to 1022.7 mb.). At 1.30 a.m. the sea again became milky white with phosphorescence, so as the render the shore lights invisible, and the same phenomenon was observed in the sky although not in such a marked degree as previously, rather the sky had a curious dappled white appearance and seemed to be composed of all sorts of erratic shapes, diamonds, circles, &c.; this lasted for fifteen minutes, the sea again losing its phosphorescence appearance, the sky becoming black at the same time. A small break now appeared to the westward through which stars were visible, this however disappeared in a few minutes, the heavy thunder clouds rolling up as black if not blacker than before. The lightning flashes became incessant, roll after roll of thunder pealing, but very little, if any, rain. During this period we arrived off the port and anchored at 2.00 a.m. The barometer now commenced to rise slowly, the storm appeared to die away to isolated flashes and peals. At 4.00 a.m. heavy rain set in, a steady downpour; the wind remaining at N.E., force 3, the barometer continued rising until 5.00 a.m. when it commenced to fall again. The wind now shifted to N.N.E., freshening, force 6-7. Heavy rain still falling. This type of weather prevailed until 7.30 a.m., the rain then ceased and the sky clearing slightly; there was however no change in the wind, the thunder clouds having also passed on. It is almost impossible to describe the awe-inspiring grandeur of that sky, it seemed to hint at the supernatural, this I know sounds ridiculous, but any others who witnessed it will, I am sure, agree with me. Other outstanding points are the absence of rain and wind until after the passing of the electric storm.
Reported In: Mar. Obs., 1927, 10, Vol IV, no 46
Approx Location: Brazil
Confidence In Sighting: High Confidence

1.74 California 1928

Observation Start Date: 05/10/1928
Observation Start Hour: 21:00 UNK
Observation End Date: 05/10/1928
Observation End Hour: 22:00 UNK
Approximate Lat: 37 deg 05' N
Approximate Lon: 123 deg 36' W
Observing Ship/Sensor: SS Tahiti
Observor(s): C. R. Carlyon, Fourth Officer
Description: May 10th, 1928, between 9 p.m. and 10 p.m. Wind N.W., force 4. Moderate N.W. sea and slight swell. Temperature, Air 57 deg, sea 58 deg. Ship passed through frequent lines and patches of water which appeared white, as if there were phosphorescence under the surface, the glow being dull and undistrubed by the break of the sea. At first thought it was fish, but on approach of the ship no movement was notieable. The night was very drk, sky being overcast with Nimbus, Stratus and St.-Cu. Clouds. In the distance it was very similar to breakers over shallow water. Ship's position at 8 p.m. was Latitude 37 deg 05' N., Longitude 123 deg 36' W.
Reported In: Mar. Obs. 1929, 05, Vol VI, no 65
Approx Location: California
Confidence In Sighting: High Confidence

1.75 Socotra 1928

Observation Start Date: 08/12/1928
Observation Start Hour: 20:00 LOC
Observation End Date: 08/13/1928

Observation End Hour: 04:00 LOC
Approximate Lat: 12 deg 30' N
Approximate Lon: 54 deg 36' E
Observing Ship/Sensor: SS Rhexenor
Observor(s): A. Marwood, Third Officer
Description: 12th August, 1928, approaching East end of Sokotra 8 p.m. to 4 a.m. 13th August A.T.S. Between these hours the whole of the sea from horizon to horizon became frequently covered with a milky appearance. Although a sea and swell of force 6, and a S.W. wind of 7, was the weather at the time, the sea dropped to a calm, and the swell diminished considerably, yet the wind remained the same, whilst the vessel was in these patches. The temperature of the air remained at 79 deg F. the whole night, whilst the sea water ranged between 79 deg F. and 70 deg F. The sky line appeared to be quite misty during the patches yet the mast head lights of an approaching vessel were visible at least 10 miles.
Reported In: Mar. Obs 1929, 08, Vol VI, no 68
Approx Location: Socotra
Confidence In Sighting: High Confidence

1.76 Banda Sea 1928

Observation Start Date: 08/14/1928
Observation Start Hour: 19:00 LOC
Observation End Date: 08/15/1928
Observation End Hour: (?)
Approximate Lat: 4 deg 53' S
Approximate Lon: 129 deg 17' E
Observing Ship/Sensor: SS Arafura
Observor(s): B. W. Dun.
Description: On August 14th, 1928, at 1900 A.T.S. (1033 M.T.G.) in Latitude 4 deg 53' S., Longitude 129 deg 17' E., with approaching darkness the sea was observed to be luminous and when the sky was completely dark the effect was very extraordinary. It did not appear to be caused by surface phosphorescence as the bow waves did not give the usual sparkle as when steaming through phosphorescence, but were quite dead. The intensity appeared to process from large quantities of phosphorescence deep down in the water, causing a diffused light to brighten up the whole sea. This phenomenon continued with varying degrees of intensity throughout the night and at daybreak the following morning the sea was its usual deep blue black. At noon, Augus 14th (0333 M.T.G.), the density of the sea was 1,022 1/2, temperature 80 deg at 1900 A.T.S., desnity 1,023 1/2, temperature 76 deg, at midnight 1,024, and temperature 78 deg at 0400 A.T.S. 15th density 1,023, temperature 77 deg. Bird Island (Manuk) was passed 240 deg distant, 2.5 miles at 0230 A.T.S. on 15th, and at 0546 stars but ship in Latitude 5 deg 48' S., Longitude 130 deg 46' E. Course 125 deg, speed 9.9 kts. Wind S.E., force 4, sea moderate.
Reported In: Mar. Obs. 1929, 08, Vol VI, no 68
Approx Location: Banda Sea
Confidence In Sighting: High Confidence

1.77 Arabian Sea 1928

Observation Start Date: 08/20/1928
Observation Start Hour: 00:50 LOC
Observation End Date: 08/20/1928
Observation End Hour: 01:45 LOC
Approximate Lat: 11 deg 50' N

Approximate Lon: 60 deg 00' E
Observing Ship/Sensor: SS Kashmir
Observor(s): W.E. Riley, Fourth Officer
Description: On August 20th, between 0050 a.m. and 0145 a.m. (Ship's time), we passed through a large patch of 'white water.' The sea became the colour of milk and was slightly luminous and whereas previously the sky had been lighter in appearance than the sea, the reverse now took place. A rough sea was running at the time and the wave tops had been quite conspicuous, but on meeting this discoloured water the sea appeared to calm down and no water came on board during the time the ship was passing through. Its western limit was quite well defined, more so than the eastern edge, and the former was visible quite fifteen or twenty minutes before the ship arrived there. Its track, if it was moving at all, appeared to be from North West to South East. Position at the time Latitude 11 deg 50' N., Longitude 60 deg 00' E. Weather Conditions: Wind S.S.W., force 6-7. Barometer 29.83 in. Temperature, Air 78. Sky clouded over one-third, fr-cu. and st-cu. Sea and swell S.W'ly, rough.
Reported In: Mar. Obs. 1929, 08, Vol VI, no 68
Approx Location: Arabian Sea
Confidence In Sighting: High Confidence

1.78 Sri Lanka 1928

Observation Start Date: 09/09/1928
Observation Start Hour: (?)
Observation End Date: 09/09/1928
Observation End Hour: (?)
Approximate Lat: 05 deg 54' N
Approximate Lon: 80 deg 48' E
Observing Ship/Sensor: SS Tampa
Observor(s): (?)
Description: 9th Sep., 1928. Observers spotted a triangular area of white milky water sharply differing from the surrounding surface. After a quarter of an hour the steamer entered the area and the entire sea became milky white. The surface of the water seemed to be covered by a luminescent surf. A spot 5 meters in diameter was swarming with shining balls. In two hours the steamer was again surrounded by the usual water. Posn: 05 deg 54' N, 80 deg 48' E.
Reported In: E.W. Barlow's Records
Approx Location: Sri Lanka
Confidence In Sighting: High Confidence

1.79 Somalia 1928

Observation Start Date: 12/31/1928
Observation Start Hour: 20:55 LOC
Observation End Date: 12/31/1928
Observation End Hour: 22:20 LOC
Approximate Lat: 10 deg 23' N
Approximate Lon: 53 deg 41' E
Observing Ship/Sensor: SS Nowshera
Observor(s): W. Ashcroft, Third Officer
Description: December 31st, 1928, Latitude 10 deg 23' N., Longitude 53 deg 41' E. at 20.00 A.T.S. Wind N.E., force 5. Barometer 29.913 in. Temperature Air 75 deg. Sea 78 deg. Sea and swell N.E.4. Cumulus 1/10th. Steering 306 deg 12 1/2 knots, the sea water was of a whitish appearance, at 20.55 A.T.S. the water was its normal colour, at 21.35 A.T.S. it was again of a whitish appearance, and at

22.20 A.T.S. was its normal colour.
Reported In: Mar. Obs. 1929, 12, Vol VI, no 72
Approx Location: Somalia
Confidence In Sighting: High Confidence

1.80 Somalia/Socotra 1929 A

Observation Start Date: 07/09/1929
Observation Start Hour: 02:30 LOC
Observation End Date: 07/09/1929
Observation End Hour: 03:55 LOC
Approximate Lat: 12 deg 35' N
Approximate Lon: 55 deg 32' E
Observing Ship/Sensor: SS Oronsay
Observor(s): W. Rice, Second Officer; E. M. Mackay, Fourth Officer
Description: At 02.30 A.T.S. on July 9th, 1929, in Latitude 12 deg 35' N., Longitude 55 deg 32' E. entered an area of phosphorescence water, extending from horizon to horizon, of whitish appearance. Ship steering 103 deg at 15.3 knots. At 3 a.m. the temperature of the sea was 77 deg F. Sky cloudless. Slight haze round the horizon. Strong S.W. wind, squally, moderately rough sea. At 03.55 A.T.S. ship passed out of this area.
Reported In: Mar. Obs. 1930, 07, Vol VII, no 79, E.W. Barlow's Records
Approx Location: Somalia/Socotra
Confidence In Sighting: High Confidence

1.81 Timor Sea 1929

Observation Start Date: 07/11/1929
Observation Start Hour: 03:30 LOC
Observation End Date: 07/11/1929
Observation End Hour: 05:20 LOC
Approximate Lat: 11 deg 00' S
Approximate Lon: 127 deg 15' E
Observing Ship/Sensor: SS Marella
Observor(s): J. Cumming, Fourth Officer
Description: 11th July, 1929, at 3.30 a.m. while crossing the Timor Sea, wind E.S.E. 4, sea 2, sky heavily clouded, the whole expanse of sea surrounding the ship took a phosphorescent glow, giving it the appearance of being lighted from beneath. The horizon line was clearly defined, the sky appearing black and the sea lighted as stated above. At 5 a.m. sea commencted to darken, and at 5.20 a.m. was normal. As the speed of the vessel was about twelve knots, the diameter of this phenomenon must have been about 22 miles.
Reported In: Mar. Obs. 1930, 07, Vol VII, no 79
Approx Location: Timor Sea
Confidence In Sighting: High Confidence

1.82 Somalia 1929

Observation Start Date: 07/14/1929
Observation Start Hour: 01:20 LOC
Observation End Date: 07/14/1929
Observation End Hour: 03:00 LOC

Approximate Lat: 7 deg 30' N
Approximate Lon: 57 deg 00' E
Observing Ship/Sensor: SS Tongariro
Observor(s): G. D. Baldwin.
Description: July 14th, 1929, at 1.20 a.m. A.T.S. in Latitude 7 deg 30' N., Longitude 57 deg 00' E. Sea became bright milky white in colour against a dark cloudless sky, giving the appearance of a bright moonlight night. At 2.00 a.m. a draw bucket showed water alive with phosphorescence, also that the temperature of the water had fallen 4 1/2 deg to 74.2 deg. At 3.00 a.m. conditions gradually becoming normal. Barometer 1008.7 mb. Temperature, Dry Bulb 75.3 def F., Wet Bulb 73.8 deg F., Sea 74.2 deg F. Wind S.S.W. force 4. Fine. Clear overhead with slight haze around horizon.
Reported In: Mar. Obs. 1930, 07, Vol VII, no 79
Approx Location: Somalia
Confidence In Sighting: High Confidence

1.83 Somalia/Socotra 1929 B

Observation Start Date: 07/31/1929
Observation Start Hour: 20:00 LOC
Observation End Date: 07/31/1929
Observation End Hour: 21:50 LOC
Approximate Lat: 12 deg 22' N
Approximate Lon: 56 deg 28' E
Observing Ship/Sensor: SS Laomedon
Observor(s): O. P. H. Wynne, Third Officer
Description: July 31st, 1929, 20.00 A.T.S. in Latitude 12 deg 22' N. Longitude 56 deg 28' E. Barometer 29.77 in. Wind S.S.W. force 6 with rough sea and swell; at 19.00 when darkness set in, the ship appeared to be surrounded by a luminous halo reflected from the water. By 20.00 the water had turned a greyish white colour which, however, did not appear to be caused by surface phosphorescence as there was little or no sparkle from the bow wave. This discolouration extended to the horizon in all directions giving it a misty appearance except between S.S.E. and W.S.W. where the horizon remained clearly defined. This phenomenon continued until 21.50 when it gradually closed in round the ship again and finally disappeared leaving the sea a normal colour with no phosphorescence. While the ship was in this discoloured water, the sea appeared to calm down considerably though the wind remained force 6. The air temperature remained steady at 79 deg F. but the sea temperature fell from 78 deg F. to 76 deg F. buthad rised to 79 deg. by 23.00 hrs.
Reported In: Mar. Obs. 1930, 07, Vol VII, no 79
Approx Location: Somalia/Socotra
Confidence In Sighting: High Confidence

1.84 Arabian Sea 1929

Observation Start Date: 08/02/1929
Observation Start Hour: 21:45 LOC
Observation End Date: 08/02/1929
Observation End Hour: 23:45 LOC
Approximate Lat: 12 deg 49' N
Approximate Lon: 50 deg 26' E
Observing Ship/Sensor: SS Kasama
Observor(s): A. J. Brown, Third Officer
Description: Whilst reading the August, 1929, number of The Marine Observer I saw the reports of

unusual phosphorescence in the Arabian Sea, and as we experienced a similar occurrence in corresponding month fairly near the same locality, I thought you might be interested to know of it. On Friday, 2nd August, 1929, in the Gulf of Aden, Latitude 12 deg 49' N., Longitude 50 deg 26' E., course 264 deg, 11 knots. At 9.30 p.m. A.T.S. the ship appeared to be approaching a bank of mist and at 9.45 p.m. ran into 'White Water'. In a short time the sea from horizon to horizon appeared as one expanse of snow. It has been described as the colour of milk, which is an excellent description, but should not be confused with what is usually termed 'Milky' for this was a pure white. The sea immediately moderated. The usual sparkling effect was totally absent, the phosphorescence evidently being at a considerable depth. This was a most extraordinary sight and lasted until 11.45 p.m., when we ran out of the 'White Water' into that of a normal colour.
Reported In: Mar. Obs. 1930, 08, Vol VII, no 80
Approx Location: Arabian Sea
Confidence In Sighting: High Confidence

1.85 Arabian Sea 1930 A

Observation Start Date: 08/18/1930
Observation Start Hour: 17:38 GMT
Observation End Date: 08/18/1930
Observation End Hour: 20:38 GMT
Approximate Lat: 15 deg 30' N
Approximate Lon: 58 deg 10' E
Observing Ship/Sensor: SS Narkunda
Observor(s): A. W. Frankling, Cadet; C. H. Moulton, Second Officer
Description: Monday, August 18th, 1930, at 1738 G.M.T., observed apparent clearing and brightening of sky to the south-westward. At 1808 hours observed sea impregnated with phosphorescence. At 1818 hours ship encountered phosphorescenct sea, and in a few minutes the whole sea all round, to the limits of visibility, was phosphorescent, giving a peculiar effect, somewhat like a moderated moonlight night, with a calm sea in shallow water. Breaking waves showed up as temporary dark patches. There was a very definite line of demarcation where the phosphorescence began, and it appeared to be travelling in a N.E'ly direction. At 1938 hours the phosphorescence began to ease off-by 2008 hours it was much less, and by 2038 hours on the moon rising it was no longer discernible to the naked eye. From 1853 to 1923 we passed some hundreds of what appeared to be dead snakes, motionless, many passing very close to the ship's side, being plainly visible in the light thrown from the ship's decks and showing up black in the phosphorescence. Some were more or less straight, others in sinuous forms and apparently tangled. On a wave breaking over them, there was no sign of movement or life. At 1800 G.M.T., Latitude 15 deg 30' N., Longitude 58 deg 10' E., Barometer 29.63 in., Temperature, Air 76 def F., Sea 77 deg F. Sea temperature at 1900 hrs. 74 deg F., Wind S.S.W. force 6/5, Sea S.W. 5, Swell S.W. 7, Cloud Fr.-Cu., A.-Cu.
Reported In: Mar. Obs. 1931, 08, Vol VIII, no 92
Approx Location: Arabian Sea
Confidence In Sighting: High Confidence

1.86 Arabian Sea 1930 B

Observation Start Date: 08/20/1930
Observation Start Hour: 19:30 LOC
Observation End Date: 08/21/1930
Observation End Hour: 01:20 LOC
Approximate Lat: 12 deg 38' N

Approximate Lon: 55 deg 19' E
Observing Ship/Sensor: SS Atreus
Observor(s): E. A. H. Gepp, Third Officer
Description: In view of various reports, which have from time to time been published in The Marine Observer, concerning "White Water" in and near the Gulf of Adean, it is interesting to note that exactly the same conditions and appearance were observed on the night of the 20th August, 1930, from S.S. Atreus. The milky appearance of the sea was first observed at 7.30 p.m. (A.T.S.), one hour and twenty minutes after sunset, in Latitude 12 deg 38' N., Longitude 55 deg 19' E., ship then steering 105 deg at 13 knots. The general appearance of the sea was a whitish, milky liquid, entirely lacking in the bright sparkle usually associated with phosphorescence, and giving to an observer the impression of sources of light at some considerable depth below the surface. Although the sky was practically cloudless, and the visibility good, as observed by the lights of another vessel proceeding in the same direction some miles distant, it appeared as though there was a thick haze or mist over the sea, which at times rendered the horizon totally indiscernible. Until 11.30 p.m. (A.T.S.) this "white water" was enocuntered in large patches, some stretching as far as the eye could see, the patches being interspersed with small darking patches and irregularly shaped belts of normal sea water. Over these latter patches there was no apeparance as of haze or mist, though this was readily discernible above the "milky" patches. After 1.20 a.m. (A.T.S.) in Latitude 12 deg 20' N., Longitude 56 deg 27' E., the ship apparently ran out of the "white water," as no more "milky" patches were to be seen. Upon first entering the above area, the wind, sea, and swell, which had been heavy from the S.W., began to moderate. Temperature off air was 79.3 def F and sea 78.0 deg F during this period.
Reported In: Mar. Obs. 1931, 08, Vol VIII, no 92
Approx Location: Arabian Sea
Confidence In Sighting: High Confidence

1.87 Arabian Sea 1930 C

Observation Start Date: 08/28/1930
Observation Start Hour: 23:00 LOC
Observation End Date: 08/29/1930
Observation End Hour: 02:50 LOC
Approximate Lat: 13 deg 47' N
Approximate Lon: 53 deg 32' E
Observing Ship/Sensor: SS Trojan Star
Observor(s): L. S. Hassell, Second Officer
Description: On August 28th, 1930, at about 11 p.m. A.T.S., north of Socotra, the vessel ran suddenly into a line of milky luminescence stretching from horizon to horizon in a north and south line, in about Latitude 13 deg 14' N., Longitude 52 deg 57' E. This appearance gave a perfectly radiant glow, making the heavens appear an inky black. All the stars were showing, and the sea after steaming for about an hour in an easterly direction had the appearance of a field of snow, being illuminated from underneath, in fact the phenomenon was almost indescribable. Several samples of the water were taken in a bucket, and when examined in the dark seemed to contain thousands of very thin lines of light, some apparently about half an inch in length, others much shorter, but when the water was examined in the light in the chartroom, very little could be seen. A bottle of this water has been retained. There was absolutely no sparkle in the water as in ordinary luminescence, and the waves broke seemingly of a black colour. The discharge from the condenser also appeared black. The sea was rough. Just before steaming out of this patch, the appearance seemed to increase in brilliancy, and I can only describe the effect as a vessel steaming through a field of pure white, illuminated show. We steamed out of this at 2.50 a.m. A.T.S. as suddenly as we entered it, in Latitude 13 deg 47' N., Longitude 53 deg 32' E., and after getting into normal water a brilliant glow was visible from north to south astern the ship.
Reported In: Mar. Obs. 1931, 08, Vol VIII, no 92

Approx Location: Arabian Sea
Confidence In Sighting: High Confidence

1.88 Arabian Sea 1931 A

Observation Start Date: 09/04/1931
Observation Start Hour: (?)
Observation End Date: 09/05/1931
Observation End Hour: (?)
Approximate Lat: 11 deg 30' N
Approximate Lon: 60 deg 00' E
Observing Ship/Sensor: Trier
Observor(s): Günther Holste, Third Officer
Description: Auf der Reise von Sokotra nach Minikoi wurde am 4. September 1931 unter etwa 11 1/2 N 60 O ein außergewöhnlich starkes meerleuchten beobachtet, ebenso am 5. September unter 10 40' N, 64 O. Das Meer war in eine weißliche Masse verwandelt und glich einer ungeheuren Easfläche. Der Himmel, der zuerst durch einen hellen Schein auf das kommende Meerleuchten aufmerksam machte, erschiem später schwarz-blau, wodurch die Sterne an Leuchtkraft gewannen. Das Bild war einer Polarlandschaft zu vergleichen; es fehlte zur Vervollständigung nur noch das Polarlicht. Wir vermuten, daß der Erreger des Leuchtens Radiolarien gewesen sind.
Reported In: Tim Wyatt, Unpublished Notes/Paper
Approx Location: Arabian Sea
Confidence In Sighting: High Confidence

1.89 North Atlantic 1931

Observation Start Date: 10/31/1931
Observation Start Hour: (?)
Observation End Date: 10/31/1931
Observation End Hour: (?)
Approximate Lat: 12 deg 51' N
Approximate Lon: 54 deg 55' W
Observing Ship/Sensor: Asphalion
Observor(s): A. V. Potter, Third Officer
Description: Steaming into a heavy southwest swell, the Asphalion was recently in the Atlantic at Lat. 12 degrees 51 minutes N., Long. 54 degrees 55 minutes W. when rough broken seas were met, Potter reported. The water, however appeared to be smooth, because each combing breaker left a shadowless wake of white, boiling water. "The expanse of water had every semblance of a sea of milk," he reported. The phenomenon continued for five hours, throwing the horizon of ink-black sky and milky sea into bold contrast.
Reported In: The New York Times, Nov. 1, 1931
Approx Location: North Atlantic
Confidence In Sighting: High Confidence

1.90 South Atlantic 1931

Observation Start Date: 12/07/1931
Observation Start Hour: 20:40 GMT
Observation End Date: 12/07/1931
Observation End Hour: 22:34 GMT

Approximate Lat: 16 deg 56' S
Approximate Lon: 3 deg 55' E
Observing Ship/Sensor: SS Herminius
Observor(s): A. G. Collins, Third Officer
Description: December 7th, 1931, between the hours of 2040 and 2234 G.M.T. observed phosphorescent sea. The night was very dark, although the sky was cloudless and the stars brilliant. The phenomenon covering the whole of the sea all round the horizon to the limits of visibility, gave the effect of the sea being illuminated by some unseen light underneath which was both peculiar and beautiful. There was no premature disturbance or warning of any description the vessel running suddenly into a mass of pale, but intense green sea with silvery-white edges to the waves, somewhat similar in appearance to the illuminated dial of a wrist-watch, and on a much larger scale. The waves, breaking in the distance, gave the appearance of the sails of a small yacht having a beam of light played upon them (as from a powerful electric torch). As each bow wave broke, the white paintwork of the bridge and vessel's superstructure was brilliantly illuminated, and as the wave settled abaft the beam the contrast between the phosphorescence and the darker or non-phosphorescent water was most marked. Scattered throughout the sea, in proximity to the vessel, were numerours small balls of phosphorous, giving an illumination of greater intensity. After about two hours the vessel passed out of this phosphorescent area as quickly as she entered it. Phosphorescent observed between Latitude 16 deg 56' S., Longitude 3 deg 55' E. and Latitude 17 deg 16' S., Longitude 4 deg 11' E. Ship's course 143 deg, speed 12 1/2 knots.
Reported In: Mar. Obs. 1932, 12, Vol IX, no 108
Approx Location: South Atlantic
Confidence In Sighting: High Confidence

1.91 Arabian Sea 1931 B

Observation Start Date: 12/29/1931
Observation Start Hour: 20:15 LOC
Observation End Date: 12/29/1931
Observation End Hour: 17:45 GMT
Approximate Lat: 11 deg 52' N
Approximate Lon: 51 deg 55' E
Observing Ship/Sensor: SS Clan Macphee
Observor(s): G. Drake, Third Officer
Description: December 29th, 1931, at 8.15 p.m. A.T.S., the ship entered, or was suddenly surrounded by an area of white water. It seemed as though shoal water stretched from horizon to horizon, being of a pale milky appearance, making the sky, already dark with Strato-Cumulus and Fracto-Nimbus clouds, look inky black. The most noticeable feature of the phenomenon was that, although there was a fresh northerly breeze blowing, the previously rough sea and moderate short swell were appreciably diminished. In point of fact, where there had been breaking seas all over, there were during the hour the white water was visible, very few crests on the sea, as if this luminescence was of an oleaginous quality. Floating objects appeared jet black and two dimensional. A faint haze of light seemed to be cast upward from some depth, causing a strain to the eye. At 1745 G.M.T. the phenomenon faded, and where the sky had seemed black and the sea almost white the sea now became black and the sky lighter. An examination of a sample of surface water with a low power lens (sextant reader) failed to reveal any specimens of plankton or other marine life from which it was judged that the light came from some depth, an hypothesis apparently supported by its eerie diffused quality. No difference was noted, either in temperature or in density between the white and the surrounding water. Sea temperature 76 deg, density 1026.2. Position of ship, Latitude 11 deg 52' N., Longitude 51 deg 55' E., speed 12 knots.
Reported In: Mar. Obs. 1932, 12, Vol IX, no 108
Approx Location: Arabian Sea
Confidence In Sighting: High Confidence

1.92 Arabian Sea 1932

Observation Start Date: 09/05/1932
Observation Start Hour: 02:00 LOC
Observation End Date: 09/06/1932
Observation End Hour: 05:00 LOC
Approximate Lat: 12 deg 53' N
Approximate Lon: 51 deg 21' E
Observing Ship/Sensor: SS Ballarat
Observor(s): D. H. F. Armstrong, Third Officer
Description: September 5th 1932 at 2 a.m. the ship entered an area of phosphorescence of an uncommon type. Our position at that time was about sixty miles north of Cape Guardafui, the weather being fine, overcast and hazy with a wind S.S.E. 3 veering and freshening as we approached the Monsoon and we were on the fringe of the current which sets north between Abd-al-Kuri and the mainland. The phosphorescence was of a sub-surface character and seemed to be at some considerable depth; there were no sparkles or patches of brightness in the bow wave or in the wash along the ship's side. The effect of the phenomenon was that of diffused illumination at the bottom of the ocean giving a steady continuous light showing from horizon to horizon. A moderate S.E. swell was running with a rising sea. At 3 a.m. the horizon was indistinguishable and at 4 a.m. the water was brighter than the sky. At the approach of daylight the phosphorescence waned and the water was its normal colour until the evening. At 9 p.m. the illumination reappeared in the same form increasing in intensity until it showed from horizon to horizon and it remained visible on the second night until daylight on the 6th when we appeared to pass out of it altogether. No phosphorescence was seen on the following evening. A remarkable feature about the whole phenomenon was the difficulty experienced in gauging the visibility; particularly was this so on the evening of the 5th. At 11 p.m. the lights of a passing steamer were observed at a distance of seven miles when actually the visibility seemed to be less than two. The barometer throughout remained steady at 29.74 in. and the temperature of the air was 80 deg-78 deg. 2 a.m., 5th September 12 deg 53' N., Longitude 51 deg 21'. E Sea 85 deg - Wind S.S.E. 3. 8 a.m., 5th September, Latitude 12 deg 59' N., Longitude 52 deg 46' E. Sea 76 deg - Wind S. 5. 9 p.m., 5th September, Latitude 12 deg 26' N., Longitude 56 deg 00' E. Sea 76 deg - Wind S.S.W. 5. 5 a.m., 6th September, Latitude 12 deg 01' N., Longitude 58 deg 17' E. Sea 78 deg - Wind S.S.W. 5. The weather remained fine and hazy and a veil of cirrus cloud was thrown across the sky. The total distance run between these times was 400 miles.
Reported In: Mar. Obs. 1933, 07, Vol X, no 111
Approx Location: Arabian Sea
Confidence In Sighting: High Confidence

1.93 North Atlantic 1933

Observation Start Date: 05/23/1933
Observation Start Hour: 04:00 GMT
Observation End Date: 05/23/1933
Observation End Hour: 05:30 GMT
Approximate Lat: 7 deg 35' N
Approximate Lon: 27 deg 20' W
Observing Ship/Sensor: SS Princesa
Observor(s): E. J. Lougheed, Second Officer
Description: 23rd May, 1933, 0400 G.M.T., vessel passed through numerous irregular banks and patches of phosphorescence; this phenomenon lasted for approximately three-quarters of an hour, and at times the whole sea (as far as the eye could observe) was affected, emitting a light milky colour. Close

to the vessel it had the appearance of milky patches thickly studded with bright stars, some of which seemed to expand and contract with little change in brilliance, but mainly they appeared to be floating inanimately on surface. Conditions at time, wind N.E. force 3, smooth sea, and short low N.N.E. swell, sky heavily overcast throughout. 0530 G.M.T. observed further patches of phosphorescence similar to, but less bright than, those seen previously
Reported In: Mar. Obs. 1934, 04, Vol XI, no 114
Approx Location: North Atlantic
Confidence In Sighting: High Confidence

1.94 Arabian Sea 1933

Observation Start Date: 08/20/1933
Observation Start Hour: 19:00 LOC
Observation End Date: 08/21/1933
Observation End Hour: 04:45 LOC
Approximate Lat: 12 deg 45' N
Approximate Lon: 57 deg 09' E
Observing Ship/Sensor: SS Kertosono
Observor(s): J.M. van driest
Description: In de nacht van 20 op 21 augustus, namen wij herhaalde malen de melkzee waar. Daar dit verschijnsel niet zoo vaak wordt waargenomen, komt het ons de moeite waard voor, een en ander nader te bescrijven. Stoomden met het s.s. "kertosono", van de Golf van Aden naar het eiland Mincoy. Namen met het oog op den Westmoesson de route benoorden Socotra. Na een betrekklijk koelan dag (gemiddelde dagtemperatuur 25 gradens C), waarbij een matige moesson doorstond, werd bij een frissche tot matige ZZW koelte, bij een watertemperatuur van gemiddeld 23 gradens C., de volgende verschijnselen waargenomen, gepaard gaande met zwaren daue en een sterke koraallucht. Stuurden N.106 gradens O. r.w. bij een vaart van ongeveer 12 3/4 mijl per uur. Te 19.00 op 12 gr 45' N.b. en 57 gr 09' O.l., liep het schip in een onafzienbare melkzee. Na een poosje in het donker op de brug te hebben gestaan, maakte het den indruk van een zich tot den horizon uitstrekkend ijsveld; waarboven de totaal onbewolkte hemel en melkweg bijzonder scherp afstaken. Het geheel maakte een imposanten indruk. Te 20.50 op 12 gr 38' N.b en 57 gr 34' O.l. was de melkzee gepasseerd. Er was geen directe overgang, geleidelijk nam de lichte kleur van het water af. Toen de melkzee uit het aicht was, werd de lucht boven de Zuidelijke en Westelijke kim hierdoor nog merkbaar verlicht. Te 22.20 op 12 gr 34' N.b. en 57 gr 54' O.l. werd opnieuw in een dergelijke melkzee gestoomd. thans was de kim minder duidelijk zichtbaar, hoewel het zicht goed leek. Te 23.40 op 12 gr 27' N.b. en 58 gr 10' O.l. was ook deze gepasseerd, doch bleef het water licht van kleur. Den 21sten Augustus van 0.45 tot 1.45 stoomende van 12 gr 23' N.b. en 58 gr 52' O.l. naar 12 gr 19' N.b. en 58 gr 36' O.l. werd opnieuw een zeer melkkleurig gedeelte gepasseerd, dat zich hier en daar een weinig groen geting voordeed. Thans was de afscheiding tusschen lucht en water zeer scherp. Hier en daar werden kleine donkere vlekken in het water waargenomen. Van 1.45 tot 3.00 stoomende van 12 gr 19' N.b. en 58 gr 36' O.l. naar 12 gr 15' N.b. en 58 gr 52' O.l. werd steeds licht melkkleurig getint water gezien. Van 3.00 tot 3.30 was de kleur van het water normaal. Na 3.30 tot 4.45 steeds melkkleurig water in verschillende kleurschakeeringen, waarna het verschijnsel geleidlijk afnam. Zooals bekend, wordt de melkkleurige zee veroorzaakt door microscopisch kleine lichtende organismen.
Reported In: Tim Wyatt, Unpublished Notes/Paper
Approx Location: Arabian Sea
Confidence In Sighting: High Confidence

1.95 Timor Sea 1933

Observation Start Date: 08/28/1933
Observation Start Hour: 00:00 LOC
Observation End Date: 08/29/1933
Observation End Hour: 02:40 LOC
Approximate Lat: 9 deg 33' S
Approximate Lon: 127 deg 56' E
Observing Ship/Sensor: SS Orari
Observor(s): A. G. Robinson, Third Officer
Description: On August 28th, 1933, early a.m., 150 miles east of Timor Island and to the northward of Sahul Bank, observed phenomenal luminosity of the sea water. Vessel at the time was steering 069 degrees at 14.0 knots bount Torres Strait, weather was very fine and clear, with light easterly breeze, slight sea and no swell. Temperature of the air 79 deg, sea 80 deg, no moon, but stars very clear and visible almost to the horizon. Phenomenon was first observed at midnight August 27th by a lightening in the sky to the eastward (a reflection from the sea on alto-cumulus cloud); this rapidly extended over the whole sky, the vessel entering dull luminous water at 00.30 A.T.S. August 28th in Latitude 9 deg 33' S., Longitude 127 deg 56' E. By 01.00 A.T.S. the sky was inky black, no clouds and stars showing very bright; the sea in all directions was a bright consistent milky-white colour showing up the horizon clearly and lighting up the ship and atmosphere to the brilliancy of a full moon. Speed was reduced and soundings taken as it appeared that the vessel might be in very shallow water, but no bottom was obtained at 120 fathoms. The water during this period did not appear to be lit by phosphorescence but as if by some powerful light at a considerable depth, the water having a strange transparent look and the bow wave showing dark in comparison to the water below, the whole effect being most extraordinary. These conditions continued with little change till 02.40 A.T.S. in Latitude 9 deg 24' S., Longitude 128 deg 31' E., when the sea became normal, the luminous bank passing to the westward showing up the western horizon and sky clearly as if lit by a full moon until 03.00 A.T.S. Air and sea temperatures and density remained unchanged throughout, 79 deg, 80 deg and 1023.0 respectively.
Reported In: Mar. Obs. 1934, 07, Vol XI, no 115
Approx Location: Timor Sea
Confidence In Sighting: High Confidence

1.96 Arabian Sea 1934 A

Observation Start Date: 02/11/1934
Observation Start Hour: 20:00 LOC
Observation End Date: 02/11/1934
Observation End Hour: 21:45 LOC
Approximate Lat: 17 deg 01' N
Approximate Lon: 63 deg 42' E
Observing Ship/Sensor: SS Corfu
Observor(s): C. S. Cookie, Second Officer
Description: February 11th, 1934, at 2000 S.T. the sea ahead was observed to be of a dull phosphorescence and stretching in a N. to S. direction as far as the eye could see. At 2012 the ship entered a large area of a dull phosphorescent-like glow which as ship progressed, entirely surrounded her, by 2020 the "glow" being of about the same intensity as the luminous dial of a watch. The wash created and the rush of water down the ship's side showed no outstanding phosphorescent brillance as is frequently noticeable, and the track left by several porpoises which were around the ship for a few minutes showed only the very least brighter. Only a very occasional bright patch was seen, the whole being of the same intensity and maintaining a uniform dull phosphorescent glow. The greatest brilliance occurred at 2030, after which and until 2133 it varied slightly and at which time the ship passed out of the area, though the glow was to be seen astern for a further 12 minutes. A ship two points on our port bow bound the

same way -- distant about 4 miles -- proved difficult to see when she entered the luminous area, her lights being considerable "dimmed" by the brightness of the water. In a W. by S. to E. by N. direction this phenomenon extended an uninterrupted distance of 23 miles. During the time the phosphorescence continued, the horizon was not definable, but in its place the ship seemed to be enclosed by a "black wall" having a depth of about 3 deg. Above this the sky and low stars were easily discernible. Position of ship, Latitude 17 deg 01' N, Longitude 63 deg 42' E., Course 257 deg, speed 16 3/4 knots. Night of February 12th-13th. At frequent intervals during the night the ship passed through areas of an intense phosphorescent brilliance unlike the effect of last night, when the whole sea was of one colour, the sea in this case appeared like the sky on a clear cloudless night, the stars being represented (though magnified many times) by the phosphorescent patches which though mainly of small size, at times extended over area many yards square. These patches could be seen some distance and had a flashing appearance which at times looked like the lights of a ship so much that the lookouts reported them as such, and it was also noticeable from the bridge. When the was created by the ship broke, the brilliance was intense, lighting up the ship's side, and being almost of a turquoise blue colour. Approximate positio of ship at midnight, Latitude 15 deg N., Longitude 55 deg E., Course 256 deg, speed 16 3/4 knots. Night of February 13th-14th. A similar phenomenon to last night occurred again to-night but if anything the brilliance was greater and more spectacular, especially in the colour of the water disturbed by the ship's bow wave. The reflection from this could be noted on the deck head of the navigation bridge (height 70 ft. above sea level). Approximate position of ship at midnight, Latitude 13 deg N. Longitude 48 deg E. Course 257 deg, speed 16 1/4 knots.
Reported In: Mar. Obs. 1935, 01, Vol XII, no 117
Approx Location: Arabian Sea
Confidence In Sighting: High Confidence

1.97 Arabian Sea 1934 B

Observation Start Date: 08/04/1934
Observation Start Hour: 15:30 GMT
Observation End Date: 08/05/1934
Observation End Hour: 01:20 LOC
Approximate Lat: 12 deg 37' N
Approximate Lon: 58 deg 20' E
Observing Ship/Sensor: SS Amarapoora
Observor(s): Second and Third Officers
Description: August 4th, 1934, 7 p.m. (G.M.T. 15.30). Weather, strong S.S.W. wind, rough sea, heavy short S.S.W. swell, sky one-third clouded, A.-St., Ci. and Ci.-St. Vessel entered large patches of phosphorescent water. By 7.05 p.m. (Ship's Time) the sea had turned to milky white of intense luminosity. The impression given to the observer was that the vessel was in a snow-covered plain and also that the vessel was in shoal water. The position of the vessel confirmed that was was well over 100 fms. soundings. This milky white appearance of sea extended right around the horizon and the luminosity was so intense that the state of the sea and swell was entirely lost to visual observation. At 7.40 p.m. (Ship's Time) this phenomenon began to disappear gradually and by 7.50 p.m. the condition of the surrounding water became normal. Temperature air 77 deg F. Surface temperature of water 78 deg F. Position of ship, Latitude 12 deg 48' N., Longitude 57 deg 30' E., course 100 deg, speed 12 1/2 knots. Again at 10.30 p.m. (19.00 G.M.T.) with same weather conditions a similar phenomenon appeared. By observation close to the vessel's side the phosphorescence appeared to be deep-seated. Temperature air 76 deg F. Temperature of surface water 78 def F. At 1.00 a.m. the moon came up bearing E.N.E. and the milky white appearance of the sea commenced to disappear to the S.W. and by 1.20 a.m. the phenomenon cleared away. Position of ship at 10.30 p.m., Latitude 12 deg 37' N., Longitude 58 deg 20' E.
Reported In: Mar. Obs. 1935, 07, Vol XII, no 119

Approx Location: Arabian Sea
Confidence In Sighting: High Confidence

1.98 South Atlantic 1935

Observation Start Date: 04/08/1935
Observation Start Hour: 22:00 LOC
Observation End Date: 04/09/1935
Observation End Hour: 00:00 LOC
Approximate Lat: 7 deg 00' S
Approximate Lon: 10 deg 00' W
Observing Ship/Sensor: MV Durham
Observor(s): W.J.V. Branch, Third Officer
Description: April 8th 1935 10 to 12 p.m. A.T.S. passed through very extensive and brilliant phosphorescent waters. At first it was noticeable only as the waves broke, but later, large and very intense patches of milky fluid were encountered. As mention in the Marine Observer's Handbook these patches did definitely assert a calming effect upon the sea surface. They could be compared to the effect that would be produced by light oils on the water. It was difficult to estimate the exact size of these patches but they were roughly circular in shape and of about 2 miles in diameter. Between them the water showed only normal phosphorescence. Some of this "milky fluid" caught in a bucket revealed nothing abnormal and it is possible the source of this light may be some distance beneath the surface. The horizon appeared to vanish altogether, being replaced by a broad band of pale light reaching, approximately, 10 deg up from the true horizon. An important feature was the fact that all sense of judging visibility and distances was destroyed. Air temperature 79 deg F. Sea temperature at frequent intervals 81 deg F. Position of ship, Latitude 7 deg S., Longitude 10 deg W.
Reported In: Mar. Obs. 1936, 04, Vol XIII, no 122
Approx Location: South Atlantic
Confidence In Sighting: High Confidence

1.99 Arabian Sea 1938

Observation Start Date: 08/30/1938
Observation Start Hour: 20:15 LOC
Observation End Date: 08/31/1938
Observation End Hour: 00:00 LOC
Approximate Lat: 16 deg 00' N
Approximate Lon: 54 deg 00' E
Observing Ship/Sensor: Hoienfels
Observor(s): (?)
Description: 30th Aug., 1938. From 2015 to 2330 local time. The water colour was milky white, changing into a greenish hue. The horizon could not be distinguished, the gleaming of sky and water was alike. It seemed that the ship was surrounded by a thick fog, but there was no mist arond the lamps of the ship. Cloudiness was insignificant, but soon it became continuous. A burning buoy, thrown on the water for the purpose of determining visibiity, disappeared in 20 minutes; this indicated a visibility of seven miles. The wave crests were white. Fish not only did not emit and luminescense, they appeared black. At 2345 it was still impossible to discern the white milky colour at a distance of 1-2 miles, which suggested shallows, the the actual depth ranged from 2400 to 2700 meters. At midnight the water appeared normal and the horizon was visible again. Water temperature 77 deg F; swell considerable; speed 12 kt.; wind velocity 1-3. Posn: 16 deg N, 54 deg E.
Reported In: E.W. Barlow's Records

Approx Location: Arabian Sea
Confidence In Sighting: High Confidence

1.100 Arabian Sea 1946

Observation Start Date: 08/28/1946
Observation Start Hour: 20:40 GMT
Observation End Date: 08/29/1946
Observation End Hour: 01:50 GMT
Approximate Lat: 14 deg 27' N
Approximate Lon: 67 deg 22' E
Observing Ship/Sensor: SS Empire Bounty
Observor(s): G. H. Taylor, Second Officer
Description: 28th to 29th August, 1946, 2040 to 0150 G.M.T. it was very dark with sky cloudy to overcast. The horizon from NW through W to South became illuminated as if from the looms of numerous powerful shore lights. After a few minutes a white line appeared on the horizon and spread rapidly until the white water surrounded the ship. The sea was a light grey with considerable luminosity, although not phosphorescent, similar to its appearance during full moon, although the moon, only 3 days old, had already sea. The sea also appeared quite calm and no "white horses" visible, but this was obviously not the true state of affairs as the motion of the vessel and relative wind force was the same as previously, when in a moderate SW'ly swell, light sea, and wind SW force 4-5. The cloud formation disappeared during the first half-hour but made no difference to the appearance of the sea. The first occurrences were observed from 2150 to 2215 G.M.T. and lastly from 2235 G.M.T. on the 28th to 0150 G.M.T. on the 29th. The last two occurrences, however, were not so bright as the first. During the last occurrence there appeared to be a complete formation of altostratus or cirrostratus veiling the whole sky and no stars were visible. Estimation of cloud height was not possible. During the phenomenon the horizon was well-defined, except to the SE, being especially so to the N and NE, where the line of white sea and black cloud showed up well. Estimation of visibility was impossible throughout and could have been anything between 2 and 2 miles. Position of ship: Latitude 14 deg 27' N. to 15 deg 14' N., Longitude 67 deg 22' E. to 66 deg 45' E., Course 320 deg. Speed 12 knots.
Reported In: Mar. Obs. 1947, 07, Vol XVI, no 137
Approx Location: Arabian Sea
Confidence In Sighting: High Confidence

1.101 Eastern Pacific 1947

Observation Start Date: 08/12/1947
Observation Start Hour: 07:00 GMT
Observation End Date: 08/12/1947
Observation End Hour: (?)
Approximate Lat: 0 deg 21' N
Approximate Lon: 91 deg 53' W
Observing Ship/Sensor: MV Port Macquarie
Observor(s): H. J. Thompson, Third Officer
Description: 8th December, 1947, 0700 G.M.T. Vessel passed through a band of vivid phosphorescence which gave the water a milky-white appearance. It was approx 100 ft. wide and had sharply defined limits. It ran in a WNW to ESE direction and extended as far as was visible. Moderate SSW breeze and moderate sea. Overcast, fine and clear, dark night. Barometer 1010.2 mb. Position of ship: Latitude 0 deg 21' N., Longitude 91 deg 53' W. Course 239 deg. Speed 16 knots.
Reported In: Mar. Obs. 1948, 10, Vol XVIII, no 142

Approx Location: Eastern Pacific
Confidence In Sighting: High Confidence

1.102 Arabian Sea 1947 A

Observation Start Date: 09/12/1947
Observation Start Hour: 04:00 GMT
Observation End Date: 09/12/1947
Observation End Hour: 05:15 GMT
Approximate Lat: 18 deg 15' N
Approximate Lon: 58 deg 35' E
Observing Ship/Sensor: MV Worcestershire
Observor(s): R. S. Fielder, Senior Third Officer
Description: 12th September, 1947, 0400 to 0515 G.M.T. At 0400 sea normal, sky completely covered with stratocumulus at 5,000 ft. approximately. Wind fresh from SW, moderate sea and long heavy SW'ly swell. At 0430 observed a whiteness ahead which at first appeared as a low-lying fog bank. On nearer approach it was seen that the sea itself was quite white and looked like breakers. Soundings were taken but no bottom found at 130 fathoms. Demarcation between normal and white sea was very plain, running NW to SE. Sea temperature before entering this area of whiteness was 76 deg F. At 0450 vessel entered this area, which stretched from horizon to horizon on both sides, and at 0505 the whole visible ocean was white with more of a diffused light than normal phosphorescence. The crests of waves were visible by their blackness against this uniformly lit sea. Two fish showed up as black and left no trail behind as they swam away. Sea temperature was now 77 deg. At 0515 vessel commenced to run out of this area, the line of separation was less pronounced on the SW side. Sea temperature started to fall and by 0700 was 71 deg and remained steady. Course 250 deg. Speed 13 knots. Position of ship: Latitude 18 deg 15'N., Longitude 58 deg 35'E.
Reported In: Mar. Obs. 1948, 07, Vol XVIII, no 141
Approx Location: Arabian Sea
Confidence In Sighting: High Confidence

1.103 Arabian Sea 1947 B

Observation Start Date: 09/15/1947
Observation Start Hour: 20:00 LOC
Observation End Date: 09/15/1947
Observation End Hour: 22:00 LOC
Approximate Lat: 12 deg 46' N
Approximate Lon: 52 deg 10' E
Observing Ship/Sensor: SS Mahsud
Observor(s): A. P. Briggs, Third Officer
Description: 15th Sepetember, 1947, 2000 A.T.S. The sea ahead was observed to be gradually changing to a dull phosphorescent glow. At 2015 A.T.S. the glow was similar in intensity to the luminous dial on a watch, and it streatched N and S as far as the eye could see. At 2100 the sea reached its greatest brilliance, making the horizon appear black compared with the water. Above an angle of 10 deg the stars were easily seen. At 2200 the glow on the sea gave the appearance of shoal water and there was no brilliant phosphorescence sparkle usually seen from the wash of the vessel. Weather conditions: Temperature air 76 deg F., sea 73 deg. Wind S'ly, force 4. Sky cloudless. Course: 090 deg. Speed 11 knots. Position of ship: Latitude 12 deg 46' N., Longitude 52 deg 10' E.
Reported In: Mar. Obs. 1948, 07, Vol XVIII, no 141
Approx Location: Arabian Sea

Confidence In Sighting: High Confidence

1.104 West Africa 1947

Observation Start Date: 10/16/1947
Observation Start Hour: 22:30 GMT
Observation End Date: 10/16/1947
Observation End Hour: 22:40 GMT
Approximate Lat: 14 deg 53' N
Approximate Lon: 17 deg 38' W
Observing Ship/Sensor: MV Roslin Castle
Observor(s): R. H. Hudson, Third Officer
Description: 16th October, 1947, 2230 G.M.T. Encountered a large area of abnormal phosphorescence, giving the sea an appearance of being almost white. It lasted about 10 minutes, during which time the vessel covered approximately 2 1/2 miles. Position of ship: Latitude 14 deg 53' N., Longitude 17 deg 38' W. Course 000 deg. Speed 16.5 knots.
Reported In: Mar. Obs. 1948, 10, Vol XVIII, no 142
Approx Location: West Africa
Confidence In Sighting: High Confidence

1.105 West Africa 1948

Observation Start Date: 08/11/1948
Observation Start Hour: 05:00 GMT
Observation End Date: 08/11/1948
Observation End Hour: (?)
Approximate Lat: 1 deg 25' N
Approximate Lon: 9 deg 40' W
Observing Ship/Sensor: MV Port Hobart
Observor(s): A. J. Barund, Second Officer
Description: 8th November, 1948, 0500 G.M.T. About an hour before daylight visibility became greatly reduced by rain showers drifting down from head, owing to the ship's speed being greater than the wind, SSE, 2, from astern. At about 0500 the shower lifed and revealed a river of phosphorescence about 100 yards wide and stretching from horizon to horizon in an almost perfectly straight line E to W. Prior to this considerable streaks of phosphorescence had been seen, mostly from N to S, but none immediately before this observation. Course 323 deg (T). Approximate position of Ship: Latitude 1 deg 25'N., Longitude 9 deg 40'W.
Reported In: Mar. Obs. 1949, 10, Vol XIX, no 146
Approx Location: West Africa
Confidence In Sighting: Low Confidence

1.106 Arabian Sea 1949 A

Observation Start Date: 01/20/1949
Observation Start Hour: 19:00 GMT
Observation End Date: 01/20/1949
Observation End Hour: 19:30 GMT
Approximate Lat: 22 deg 23' N
Approximate Lon: 64 deg 40' E
Observing Ship/Sensor: MV Repton

Observor(s): G. R. Watts, Third Officer
Description: 20th January, 1949, 1900-1930 G.M.T. Vessel passed through a belt of brilliant phosphorescence extending 4 1/2 miles. The night was dark and the phosphorescence was a dense mass of uniform radiance which cast a bright reflection in the sky resembling a large patch of very low mist or a field of ice. Wind WSW, 2, slight sea and swell, cloudless sky, visibility very good. Course 115 deg, speed 9.3 knots. Position of ship: Latitude 22 deg 23' N., Longitude 64 deg 40' E.
Reported In: Mar. Obs. 1950, 01, Vol XX, no 147
Approx Location: Arabian Sea
Confidence In Sighting: High Confidence

1.107 Arabian Sea 1949 B

Observation Start Date: 01/25/1949
Observation Start Hour: 15:00 GMT
Observation End Date: 01/26/1949
Observation End Hour: (?)
Approximate Lat: 17 deg 36' N
Approximate Lon: 62 deg 01' E
Observing Ship/Sensor: SS Lassell
Observor(s): S. Dickinson, Chief Officer
Description: 25th January, 1949, 1500 G.M.T. Observed a glow in the sky which at first was thought to be aurora. As it became brighter it was definitely seen to be reflection from the sea. At 1925 the vessel steamed into phosphorescence which at one time appeared to stretch to the horizon on all sides. Throughout the night, and also on the next night, the ship steamed across patches of varying brilliancy. The largest area took about six hours to traverse. Position of Ship: Latitude 17 deg 36' N., Longitude 62 deg 01'E.
Reported In: Mar. Obs. 1950, 01, Vol XX, no 147
Approx Location: Arabian Sea
Confidence In Sighting: High Confidence

1.108 Arabian Sea 1949 C

Observation Start Date: 08/16/1949
Observation Start Hour: 16:50 GMT
Observation End Date: 08/16/1949
Observation End Hour: 17:36 GMT
Approximate Lat: 12 deg 33' N
Approximate Lon: 57 deg 27' E
Observing Ship/Sensor: SS Matheran
Observor(s): R. M. Lucas, Third Officer
Description: 16th August,, 1949, 1650 G.M.T. The vessel crosses a definite dividing line and entered an area of phosphorescence. The affected sector was from horizon to horizon in a N-S direction, and gave the sea a "milky" appearance to such an extent that the ship's wash was hardly discernible from the bridge. A similar line of demarcation was observed on the east side of the area, which was crossed at 1736 in lat. 12 deg 29' N., long. 57 deg 39' E. The sky was cloudless, corrected barometer 1006.4 mb., wind SSW, 6. Temperatures: air 77 deg F., wet bulb 74 deg, sea 76 deg. Position of ship 12 deg 33'N., Longitude 57 deg 27' E.
Reported In: Mar. Obs. 1950, 07, Vol XX, no 149
Approx Location: Arabian Sea
Confidence In Sighting: High Confidence

1.109 Arabian Sea 1949 D

Observation Start Date: 08/16/1949
Observation Start Hour: 16:15 GMT
Observation End Date: 08/16/1949
Observation End Hour: (?)
Approximate Lat: 12 deg 20' N
Approximate Lon: 57 deg 30' E
Observing Ship/Sensor: SS Atlantis
Observor(s): R. Phillips, Senior Third Officer
Description: 16th August, 1949, 1615 G.M.T. Vessel passed through an area of uniform luminosity approximately 1 mile wide. Position of ship: Latitude 12 deg 20'N., Longitude 57 deg 30'E.
Reported In: Mar. Obs. 1950, 07, Vol XX, no 149
Approx Location: Arabian Sea
Confidence In Sighting: High Confidence

1.110 Somalia 1949

Observation Start Date: 08/24/1949
Observation Start Hour: 22:00 LOC
Observation End Date: 08/24/1949
Observation End Hour: 04:00 LOC
Approximate Lat: 11 deg 20' N
Approximate Lon: 52 deg 32' E
Observing Ship/Sensor: SS Sofia
Observor(s): (?)
Description: [There is a note saying this is from US. Hyd. Bull. 3151.] On August 24, 1949, at 2200 ship's time, in approximately lat. 11 deg 20' N., lon. 52 deg 32' E., while en route from Vizagapatam to Baltimore, discolored water was observed. All around as far as could be seen the was was all white appearing like a snow or ice field, giving off an intense white light or glow. This white cover seemed to be about 2 feet deep. Before the discoloured water was entered the atch officer could easily see its edges which were sharply defined. This discolored water remained visible all night, until 0500 ship's time (gradually diminishing after 0400), on August 25, 1949, in approximately lat. 11 deg 57' N., lon 51 deg 28' E., and was observed by both officers and crew. No one on board had ever seen anything like it before. A sample of water taken and in the bucket small thin white threads, 1 inch long and smalled, could be seen distinctly, but as soon as the light was put on they became invisible. Ordinary phosphorescence was also observed which was altogether different from the white threads which gave off a continuous white light or glow. On the surface a great many black round spots or stains about 4 to 6 inches in diameter were observed. When viewed from the ship's bow it was just like ploughing through an ice or snow field about 2 feet thick. The night was clear (without the moon); wind SW., force 5-4; sea SW., amount 4-3; temperature of air, 74 deg F.; barometer, 29.82 inches. The temperature fell suddenly when this white water was [missing text.] (H1-15(2).)
Reported In: E.W. Barlow's Records
Approx Location: Somalia
Confidence In Sighting: High Confidence

1.111 Arabian Sea 1949 E

Observation Start Date: 09/01/1949
Observation Start Hour: 22:30 GMT
Observation End Date: 09/01/1949
Observation End Hour: 23:30 GMT
Approximate Lat: 12 deg 55' N
Approximate Lon: 54 deg 27' E
Observing Ship/Sensor: MV Georgic
Observor(s): A. R. M. Graham, Senior Third Officer
Description: 1st September, 1949, 2230 G.M.T. Diffused phosphorescence or "milky sea" was observed in a patch of varying luminosity. It first became apparent about 2330, and grew gradually brighter until the vessel entered the brightest part, which was clearly seen before it was reached. At no time was it bright enough to illuminate an object. The waves appeared to break less frequently in the brightest part. Positon of ship: Latitude 12 deg 55' N., Longitude 54 deg 27'E.
Reported In: Mar. Obs. 1950, 07, Vol XX, no 149
Approx Location: Arabian Sea
Confidence In Sighting: High Confidence

1.112 South Pacific 1950

Observation Start Date: 01/11/1950
Observation Start Hour: 09:20 GMT
Observation End Date: 01/11/1950
Observation End Hour: 10:30 GMT
Approximate Lat: 36 deg 26' S
Approximate Lon: 159 deg 00' W
Observing Ship/Sensor: SS Northumberland
Observor(s): T. G. Fuller, Third Officer
Description: 11th January, 1950, 0920 and 1030 G.M.T. Passed several phosphorescent patches; one relatively small patch estimated to be about 20 ft. in diameter. On both occasions the patches had the appearance of a strong light shining under water and the surrounding sea, particularly at 1030, appeared to be covered with twinkling lights. The patches were in a N-S line and were visible at a distance of 1 mile or more. Position of ship at 0920: Latitude 36 deg 26'S., Longitude 159 deg 00'W. at 1030: Latitude 36 deg 26'S., Longitude 158 deg 43'W.
Reported In: Mar. Obs. 1951, 01, Vol XXI, no 151
Approx Location: South Pacific
Confidence In Sighting: Very Low Confidence

1.113 West Africa 1950

Observation Start Date: 03/31/1950
Observation Start Hour: 05:55 GMT
Observation End Date: 03/31/1950
Observation End Hour: (?)
Approximate Lat: 17 deg 00' N
Approximate Lon: 17 deg 47' W
Observing Ship/Sensor: SS Empire Martaban
Observor(s): W. Mottram, Chief Officer
Description: 31st March, 1950, 0555 G.M.T. The vessel passed through a line of "white water" which extended some 4 miles in an E-W'ly direction, and at a distance of some 300 yards looked like the crest

of a "comber". A few minutes later three large patches of phosphorescence were observed lying roughly in the same direction. Wind N, force 3, slight sea, cloudless sky, very good visibility. Position of ship: Latitude 17 deg 00'N., Longitude 17 deg 47'W.
Reported In: Mar. Obs. 1951, 01, Vol XXI, no 151
Approx Location: West Africa
Confidence In Sighting: Low Confidence

1.114 Arabian Sea 1950 A

Observation Start Date: 08/08/1950
Observation Start Hour: 20:30 UNK
Observation End Date: 08/08/1950
Observation End Hour: 01:00 UNK
Approximate Lat: 17 deg 12' N
Approximate Lon: 56 deg 40' E
Observing Ship/Sensor: SS Ioannis Zafinakis
Observor(s): (?)
Description: [There is a note saying this is from the US Hyd. Bull. 3184] On August 8, 1950 at 2030 G. C. T. in lat. 17 deg 12' N., lon. 56 deg 40' E., the southwestern horizon commenced to whiten. Ten minutes later the surface of the sea about the vessel assumed a milky color which reduced the visibility to 5 miles. This discoloration was considerably different from that of phosphorescence. During the phenomenon which lasted 4 1/2 hours the lower layers of the atmosphere acquired a very thin whitish appearance reaching to approximately 15 deg of altitude dimming the brilliancy of the stars. Although the sea was rough and the vessel pitched and rolled, taking moderately heavy seas over the forecastle it seemed as though the sea was calm and almost glassy as neither waves nor crests could be observed, except the bow wave which was dark in color. At about 0015 G. C. T., August 9, the sky to the south took on a lighter appearance than the sea below it, and the contrary occurred in the north. At 0050 G. C. T. in lat. 16 deg 48' N., lon 55 deg 30' E. the ocean to the south-west began to darken and eight minutes later the surface of the sea had returned to its usual color and waves and crests again appeared. The weather was clear; wind SW. force 6; rough sea, moderate swell. (H4/5.)
Reported In: E.W. Barlow's Records
Approx Location: Arabian Sea
Confidence In Sighting: High Confidence

1.115 Arabian Sea 1950 B

Observation Start Date: 08/11/1950
Observation Start Hour: 15:40 GMT
Observation End Date: 08/11/1950
Observation End Hour: (?)
Approximate Lat: 19 deg 34' N
Approximate Lon: 60 deg 08' E
Observing Ship/Sensor: MV Caledonia
Observor(s): A. Macadam, Junior Third Officer
Description: 11th August, 1950, 1540 G.M.T. During the hours of darkness the surface of the sea was covered with a milky phosphorescence. The strength of the illumination was such that the tops of the breaking seas were indiscernible, the sea appearing perfectly smooth, although there was a strong breeze and a heavy SW'ly sea and swell running. The following night the same phenomenon was observed, but the strength of the illumination was greatly reduced. Air temp. 78 deg F., sea 78 deg. Position of ship 19 deg 34'N, 60 deg 08' E.

Reported In: Mar. Obs. 1951, 07, Vol XXI, no 153
Approx Location: Arabian Sea
Confidence In Sighting: High Confidence

1.116 Arabian Sea 1950 C

Observation Start Date: 08/12/1950
Observation Start Hour: 18:00 GMT
Observation End Date: 08/13/1950
Observation End Hour: 18:00 GMT
Approximate Lat: 14 deg 43' N
Approximate Lon: 60 deg 46' E
Observing Ship/Sensor: SS Karanja
Observor(s): G. C. Johnson
Description: 12th August, 1950, 1800 G.M.T. The sea was observed to glow with an even luminosity. No globules of phosphorus were observed and the luminosity continued for about two hours, a distance of some 25 miles. White foam appeared black on the pale-green background of the sea. Position of ship: 14 deg 43'N, 60 deg 46'E. The phenomenon occurred again on the 13th at 1800 in 10 deg 53'N, 57 deg 32'E.
Reported In: Mar. Obs. 1951, 07, Vol XXI, no 153
Approx Location: Arabian Sea
Confidence In Sighting: High Confidence

1.117 Arabian Sea 1950 D

Observation Start Date: 08/13/1950
Observation Start Hour: (?)
Observation End Date: 08/15/1950
Observation End Hour: (?)
Approximate Lat: 19 deg 40' N
Approximate Lon: 58 deg 45' E
Observing Ship/Sensor: MV British Respect
Observor(s): G. Barber, Second Officer; W. Johnston, Third Officer
Description: 13th to 15th August, 1950. Unusual phosphorescence was observed during the night and early morning while proceeding along the Arabian coast between Masira Island and Khabilya Island. The sea at the time was one sheet of glowing light, the colour of milk, reaching from horizon to horizon, giving the impression that we were proceeding across a huge flat field of snow. Although the sea was breaking heavily at the time the wave crests became invisible, and the phenomenon created the impression of a flat calm. Occasionally a wave crest would appear as a line of electric-blue fire. So marked was the difference between the sea and sky, which was lightly clouded at the time, that the horizon was clearly defined and it would have been a simple matter to have taken star observations. The phosphorescence lasted for several hours at a time.
Reported In: Mar. Obs. 1951, 07, Vol XXI, no 153
Approx Location: Arabian Sea
Confidence In Sighting: High Confidence

1.118 Arabian Sea 1950 E

Observation Start Date: 08/13/1950
Observation Start Hour: (?)

Observation End Date: (?)
Observation End Hour: (?)
Approximate Lat: 11 deg 10' N
Approximate Lon: 61 deg 38' E
Observing Ship/Sensor: TSS Esperance Bay
Observor(s): (?)
Description: [Report was not printed in the Marine Observer but was classified as a "white water" sighting by the journal. "White water" being another name for Milky Sea.] [The account was found in the notes of Tim Wyatt and is written below.] Sea in vicinity of vessel showed peculiar luminosity extending to horizon. Light haze in distance. Later at 1800 GMT during rain squall luminosity became particularly intense. Effect being accentuated by dark sky. Wind 190 veering later. Temp 78 deg, Sea 78 deg. Luminosity contintued until 22:00 when it faded.
Reported In: Mar. Obs. 1951, 07, Vol XXI, no 153; Tim Wyatt Unpublished Paper/Notes
Approx Location: Arabian Sea
Confidence In Sighting: High Confidence

1.119 Arabian Sea 1950 F

Observation Start Date: 08/14/1950
Observation Start Hour: (?)
Observation End Date: (?)
Observation End Hour: (?)
Approximate Lat: 16 deg 56' N
Approximate Lon: 56 deg 05' E
Observing Ship/Sensor: SS British Statesman
Observor(s): (?)
Description: [Report was not printed in the Marine Observer but was classified as a "white water" sighting by the journal. "White water" being another name for Milky Sea.] [The account was found in the notes of Tim Wyatt and is written below.] A white band of light appeared to the northward. Ten minutes later the sea to leeward turned slowly white and by 16.30 it had a decidedly milky appearance all around. This lasted until 1715 when it disappeared below the southern horizon leaving a white glow in the southern sky. Conditions at time of observation: Wind S.W. force 6. Sea moderately breaking. Corrected Barometer 1003.
Reported In: Mar. Obs. 1951, 07, Vol XXI, no 153; Tim Wyatt Unpublished Paper/Notes
Approx Location: Arabian Sea
Confidence In Sighting: High Confidence

1.120 Oman 1950

Observation Start Date: 08/14/1950
Observation Start Hour: 19:30 LOC
Observation End Date: 08/15/1950
Observation End Hour: 22:30 LOC
Approximate Lat: 20 deg 00' N
Approximate Lon: 59 deg 00' E
Observing Ship/Sensor: SS WM AM Binden
Observor(s): (?)
Description: On August 14, 1950 ship's time in lat. 20 deg 00' N, lon 59 deg 00' E., the ship entered an area of discolored water which was milky white in appearance and lasted until about 0430 the following morning. The discoloration was first observed between Masirah Island and Ras Abu Rasas, and was

last noted near Ras Madrakah. Upon entering the white water the sea temperature was observed to rise from 69 deg to 78 deg F., and when the vessel passed out of the phenomenon the water temperature dropped again. The sky was clear with a thick haze on the horizon; wind SSW. to SW.; force 4 to 5; rough SW'ly sea and swell; barometer 29.59 to 29.64 inches; air temperature 76 deg to 78 deg F. A second occurrence of the phenomenon was encountered during the evening of August 15 between the Kuria Muria Islands and the area off Jabal Jingjili in lat. 17 deg 00' N., lon. 56 deg 00' E. The milky water brightened the horizon considerably when it first showed up and from 1930 to 2230 the water was almost pure white. Immediately on entering the disclored water the sea temperature rose from 68 deg F. to 77 deg F. It is believed that because of the sudden rise in temperature that this discolored area was definitely i the form of a warm current from the south and was probably more heavily laden with microscopic plant and animal life than the ordinary sea water. Samples of the water were obtained and upon agitating it in a dark room it glowed very brightly. The sky was overcast; wind SW, force 5; rough sea; barometer 29.44 inches; air temperature 76 deg F. (H1/15-4).
Reported In: E.W. Barlow's Records
Approx Location: Oman
Confidence In Sighting: High Confidence

1.121 Arabian Sea 1950 G

Observation Start Date: 08/15/1950
Observation Start Hour: 22:00 GMT
Observation End Date: 08/17/1950
Observation End Hour: (?)
Approximate Lat: 11 deg 05' N
Approximate Lon: 62 deg 35' E
Observing Ship/Sensor: SS Clan Chattan
Observor(s): G. A. Berry, Second Officer
Description: 15th and 16th, August, 1950. During the night watches the sea, from horizon to horizon, appeared to be illuminated from beneath. The effect was that of a snow-covered field, with the sky, although clear, showing dark against the water. The source of the illumination was evidently entirely on the surface, as dark patches showed through where the water was disturbed by the movement of the ship. The phenomenon was first noticed at 2200 G.M.T. on the 15th, persisting until daylight, and was observed again on the 16th from sunset to sunrise. Mid-position of ship: 11 deg 05' N, 62 deg 35'E.
Reported In: Mar. Obs. 1951, 07, Vol XXI, no 153
Approx Location: Arabian Sea
Confidence In Sighting: High Confidence

1.122 Arabian Sea 1950 H

Observation Start Date: 08/17/1950
Observation Start Hour: (?)
Observation End Date: (?)
Observation End Hour: (?)
Approximate Lat: 11 deg 20' N
Approximate Lon: 62 deg 38' E
Observing Ship/Sensor: SS Indian Endeavour
Observor(s): (?)
Description: [Report was not printed in the Marine Observer but was classified as a "white water" sighting by the journal. "White water" being another name for Milky Sea.]
Reported In: Mar. Obs. 1951, 07, Vol XXI, no 153

Approx Location: Arabian Sea
Confidence In Sighting: High Confidence

1.123 Arabian Sea 1950 I

Observation Start Date: 08/17/1950
Observation Start Hour: (?)
Observation End Date: (?)
Observation End Hour: (?)
Approximate Lat: 16 deg 58' N
Approximate Lon: 63 deg 15' E
Observing Ship/Sensor: SS Jehangir
Observor(s): (?)
Description: [Report was not printed in the Marine Observer but was classified as a "white water" sighting by the journal. "White water being another name for Milky Sea.]
Reported In: Mar. Obs. 1951, 07, Vol XXI, no 153
Approx Location: Arabian Sea
Confidence In Sighting: High Confidence

1.124 Arabian Sea 1950 J

Observation Start Date: 08/18/1950
Observation Start Hour: (?)
Observation End Date: (?)
Observation End Hour: (?)
Approximate Lat: 12 deg 32' N
Approximate Lon: 59 deg 45' E
Observing Ship/Sensor: SS Indian Endeavour
Observor(s): (?)
Description: [Report was not printed in the Marine Observer but was classified as a "white water" sighting by the journal. "White water" being another name for Milky Sea.]
Reported In: Mar. Obs. 1951, 07, Vol XXI, no 153
Approx Location: Arabian Sea
Confidence In Sighting: High Confidence

1.125 Arabian Sea 1950 K

Observation Start Date: 08/19/1950
Observation Start Hour: 04:05 LOC
Observation End Date: 08/19/1940
Observation End Hour: 04:45 LOC
Approximate Lat: 10 deg 40' N
Approximate Lon: 58 deg 43' E
Observing Ship/Sensor: SS Exchester
Observor(s): (?)
Description: [There is a note saying this is from the US Hyd. Bull. 3184] On August 19, 1950 at 0405 ship's time, in lat. 10 deg 40' N., lon 58 deg 43' E., en route from Cochin, India to Suez, what seemed to be a fog bank on the horizon was observed. At 0410 the ship entered a body of water which appeared milky white. At 0435 the intensity of the phenomenon appeared to be diminishing, and by 0445 the vessel was again in normal water.

Reported In: E.W. Barlow's Records
Approx Location: Arabian Sea
Confidence In Sighting: High Confidence

1.126 Arabian Sea 1950 L

Observation Start Date: 08/20/1950
Observation Start Hour: (?)
Observation End Date: (?)
Observation End Hour: (?)
Approximate Lat: 11 deg 35' N
Approximate Lon: 60 deg 13' E
Observing Ship/Sensor: MV Chinese Prince
Observor(s): (?)
Description: [Report was not printed in the Marine Observer but was classified as a "white water" sighting by the journal. "White water" being another name for Milky Sea.] [The account was found in the notes of Tim Wyatt and is written below.] On passage from Colombo to Suez Lag 11.35N Long 60 deg 13' E. Aug 20th 1950 at 0000 hrs. Thick fog observed on surface of water about 2 feet high. Wind WSW. Force 4 temp. 77/73. Barometer 1008.4 Steady. Further observation on above phenomena at 0100Z Thick fog developed into mist through whcih the ship's breakers could be seen. The whole sea took on a very bright, almost milky appearance against which the sky looked very dark. Temp at this time was 76/73. Bar. Steady. Wind WSW 4, SW Temp 85 deg. With breaking of dawn the phenoma disappeared.
Reported In: Mar. Obs. 1951, 07, Vol XXI, no 153; Tim Wyatt Unpublished Paper/Notes
Approx Location: Arabian Sea
Confidence In Sighting: High Confidence

1.127 Arabian Sea 1950 M

Observation Start Date: 08/21/1950
Observation Start Hour: 21:15 GMT
Observation End Date: 08/22/1950
Observation End Hour: (?)
Approximate Lat: 11 deg 44' N
Approximate Lon: 60 deg 42' E
Observing Ship/Sensor: SS Orbita
Observor(s): (?)
Description: [Report was not printed in the Marine Observer but was classified as a "white water" sighting by the journal. "White water" being another name for Milky Sea.] [The account was found in the notes of Tim Wyatt and is written below.] 21-22nd Aug. 1950 21st. Mon 18.00 11 deg 40' N 61 deg 00' E Sea Temp 77 deg F. 22nd Tues 11 deg 51' N 60 deg 12' E. Sea temp 73 deg F. Arabain Sea position 11 deg 44' N 60 deg 42' E. At 21.15 hrs GMT on 21st August 1950 Bar. 1008.5 Wind S.W. Force 4. Air temp 77 deg. Wet Bulb 74 deg. Sea temp at 20.00 GMT was 77 deg F. at 21.30 hrs GMT during phenomenon sea temp dropped to 73 deg F. At 21.00 hrs the horizon towards the west became luminous - having the appearance of a large port on the horizon. Gradually becoming brighter as the vessel approached. The sea became much lighter in colour until it appeared to be milky. No wave crests or bow wwash could be distinguished from the surroundings although they had been well defined previously. This state existed for well over one hour. At times the horizon to the South darkened as thought the vessel was sailing at the edge of the phosphorescence. The milky appearance of the sea although diminishing in intensity existed for several hours. I realize that this phenomenon has been

reported before from these parts, but the remarkable drop in sea temp has not been recorded and as can be seen is well below average for August and we hope that you will find this information useful.
Reported In: Mar. Obs. 1951, 07, Vol XXI, no 153; Tim Wyatt Unpublished Paper/Notes
Approx Location: Arabian Sea
Confidence In Sighting: High Confidence

1.128 Arabian Sea 1951 A

Observation Start Date: 03/14/1951
Observation Start Hour: 02:00 LOC
Observation End Date: 03/14/1951
Observation End Hour: 02:20 LOC
Approximate Lat: 15 deg 50' N
Approximate Lon: 41 deg 34' E
Observing Ship/Sensor: MV Cheshire
Observor(s): J. S. Brownlee, Senior Third Officer
Description: 14th March 1951, 0200 S.M.T. Phosphorescence was observed in the form of broad streaks, about 50 ft. apart which stretched right across the horizon. It emitted a very bright glare which was first observed 8 to 10 miles away and resembled the lights of a large town showing on the horizon. On approaching, the streaks became clearly defined and looked exactly like waves breaking on a shore. On a course of 147 deg at 14.5 knots we continued through the phosphorescence for some 20 minutes; over this period the visibility was seriously affected, being reduced to 1-2 miles, and a strong, oily, fishy odour was present. As the phosphorescence passed astern the glare died away, finally disappeared a little over an hour after it was first observed. The wind was SE force 2, with negligible sea and swell. Air temp. 79 deg F, sea 79 deg. Position of ship: 15 deg 50'N, 41 deg 34'E.
Reported In: Mar. Obs. 1952, 01, Vol XXII, no 155
Approx Location: Arabian Sea
Confidence In Sighting: High Confidence

1.129 Arabian Sea 1951 B

Observation Start Date: 07/30/1951
Observation Start Hour: 23:00 GMT
Observation End Date: 07/31/1951
Observation End Hour: 00:45 GMT
Approximate Lat: 16 deg 39' N
Approximate Lon: 56 deg 30' E
Observing Ship/Sensor: MV Neathauma
Observor(s): (?)
Description: 30th July, 1951, 2300 G.M.T. What appeared to be a line of breakers was sighted ahead. At 2310, the vessel entered a patch of phosphorescence where the sea took on the appearance of milk with an oily surface. The Aldis Lamp was turned on to it in order to investigate the cause, but with no success. The beam of the lamp was surrounded by a glow as though in fog, rather like a bright lunar halo. The patch was cleare at 2340, and a similar one entered at 2345. This was brighter than the first; the horizon could not be seen and the lights of the ship seemed to be dimmed. Even the ship's bow wave lost its usual brightness. The patch was cleared at 0045 on the 31st, and nothing further was seen. Both patches extended as far as could be seen in all directions. The weather was fine and clear with 1/10 cloud and the wind was SW, force 4. [There is a note from E.W. Barlow mentioning that the brightness of the bow wave is just referring to breaking water not bioluminescence.] Position of ship at 2310: 16 deg 35'N, 56 deg 25'E. at 2340: 16 deg 39'N, 56 deg 30'E at 2345: 16 deg 39'N, 56 deg 31'E at 0045: 16

deg 45'N, 56 deg 42E.
Reported In: E.W. Barlow's Records
Approx Location: Arabian Sea
Confidence In Sighting: High Confidence

1.130 Arabian Sea 1951 C

Observation Start Date: 08/06/1951
Observation Start Hour: 19:25 GMT
Observation End Date: 08/06/1951
Observation End Hour: (?)
Approximate Lat: 17 deg 18' N
Approximate Lon: 56 deg 20' E
Observing Ship/Sensor: SS Olympic Flame
Observor(s): (?)
Description: [There is a note saying this is from US. Hyd. Bull 46/51] on August 6, 1951, in lat. 17 deg 18' N., lon 56 deg 20' E. at 1925 G.M.T. he observed a very peculiar area of discolored water. The area was milky white with very noticeable streaks of phosphorescence running through it and covered and area of about 15 miles. Weather was clear, wind SW force 6, moderately southweaterly sea with long swell, barometer 29.54 inches, air 76 deg F., water 73 deg F. (H 1/15-4)
Reported In: E.W. Barlow's Records
Approx Location: Arabian Sea
Confidence In Sighting: High Confidence

1.131 Arabian Sea 1951 D

Observation Start Date: 08/13/1951
Observation Start Hour: 00:00 GMT
Observation End Date: 08/13/1951
Observation End Hour: (?)
Approximate Lat: 15 deg 01' N
Approximate Lon: 56 deg 17' E
Observing Ship/Sensor: TES Theliconus
Observor(s): R. A. Moorhouse, Chief Officer
Description: 13th August, 1951, 0000 G.M.T. From this time onwards until 0005 on the 13th, the vessel passed through areas of phosphorescence in which the sea appeared to be floodlit from beneath the surface. Demarcation lines between varying degrees of phosphorescence and between normal and phosphroescent areas were clearly visible for some time before the areas were actually entered. Similar conditions prevailed from 0015 until dawn on the 13th, when the glow was still visible. The sky was partly cloudy with 4/8 Cu and the sea was moderate to rough with a heavy sw'ly swell. Course 77 deg, speed 15 kt. Position of ship 2000 on the 12th: 15 deg 01'N, 56 deg 17'E
Reported In: Mar. Obs. 1952, 07, Vol XXII, no 157
Approx Location: Arabian Sea
Confidence In Sighting: High Confidence

1.132 Arabian Sea 1951 E

Observation Start Date: 08/14/1951
Observation Start Hour: 01:00 GMT
Observation End Date: 08/14/1951

Observation End Hour: 01:15 GMT
Approximate Lat: 17 deg 22' N
Approximate Lon: 57 deg 00' E
Observing Ship/Sensor: SS Seathinell
Observor(s): (?)
Description: [There is a note saying that this account comes from US Hud. Bull. 22/52.] At 0100 G.M.T., 14 August 1951, in position 17 deg 22' N., 57 deg 00' E., the sea took on a white appearance covering the entire area to the horizon, giving an impression of either an icefield or very shallow water. It was not as bright as a phosphorescent substance. This phenomena lasted until 0115 G.M.T. at which time twilight was beginning. The sky was overcast and at first very dark in the northwest, then becoming very light, and at 0105 G.M.T. the horizon in the southwest had become totally obscured, the sky blending with the sea. A light haze seemed to engulf the vessel at this time, lasting until 0115 G.M.T. Moderate rough south-southwesterly sea on a moderate southwesterly swell, barometer 29.69 inches, air and sea temperature 77 deg F., wind southwest by south, force 6. Soundings yielded no bottom.
Reported In: E.W. Barlow's Records
Approx Location: Arabian Sea
Confidence In Sighting: High Confidence

1.133 Arabian Sea 1951 F

Observation Start Date: 08/23/1951
Observation Start Hour: 15:00 GMT
Observation End Date: 08/23/1951
Observation End Hour: 18:00 GMT
Approximate Lat: 10 deg 45' N
Approximate Lon: 63 deg 36' E
Observing Ship/Sensor: SS Clan Macnath (3232)
Observor(s): (?)
Description: 23rd August 1951, 1500 G.M.T. The sea assumed a brilliant phosphorescence extending from the ship to the horizon. The brilliance was such that the bow ave of the ship and the crests of waves in the vicinity were not discernible. The entire horizon was illuminated until about 1800, the phenomenon occurring during hours of darkness. Position of ship: 10 deg 45' N, 63 deg 36' E. (Mid-Point of observation.)
Reported In: E.W. Barlow's Records
Approx Location: Arabian Sea
Confidence In Sighting: High Confidence

1.134 Arabian Sea 1952 A

Observation Start Date: 01/28/1952
Observation Start Hour: 18:35 GMT
Observation End Date: 01/28/1952
Observation End Hour: 22:45 GMT
Approximate Lat: 15 deg 42' N
Approximate Lon: 58 deg 49' E
Observing Ship/Sensor: SS Hawaiian Retailer
Observor(s): (?)
Description: [There is a note saying this is from US. Hyd. Bull 22/52.] On January 28, 1952, at 1835 G.M.T. in position 15 deg 23' N., 57 deg 27' E., the vessel encountered an area of discolored water, milky white in color and visible in a well-defined line. At 1950 G.M.T. occasional streaks of clear water

were encountered and at 2245 G.M.T. in position 15 deg 42' N., 58 deg 49' E., the vessel again entered clear water. During most of the above time the entire surface of the sea resembled a field of snow with an occasional glow of phosphorus visible in the bow wave. Sky clear, wind ENE, force 2, smooth sea, swell nil, barometer 29.99 inches, temperatures: dry bulb 76 deg F., wet bulb 70 deg F., sea 76 deg F.
Reported In: E.W. Barlow's Records
Approx Location: Arabian Sea
Confidence In Sighting: High Confidence

1.135 Arabian Sea 1952 B

Observation Start Date: 02/01/1952
Observation Start Hour: 19:25 GMT
Observation End Date: 02/01/1952
Observation End Hour: 19:38 GMT
Approximate Lat: 10 deg 10' N
Approximate Lon: 50 deg 38' E
Observing Ship/Sensor: MV Richmond Castle
Observor(s): T. P. Hebden, Third Officer
Description: 1st February, 1952, 1925-1938 G.M.T. The sea gave off a strong even light which was different from normal phosphorescence in that the broken sea around the ship and wave crests gave off no light. The illumination had a brownish tinge and resembled the reflection of arc lights hung over the ship's side when at anchor in a muddy river, but the light was not restricted to the immediate vicinity of the ship. The wind was 052 deg force 3 to 4 and visibility was good. The sea temperature 78 deg F. Position of ship: 10 deg 10'N, 50 deg 38'E. [There is a note, presumably from E.W. Barlow, classifying this as a milky sea.]
Reported In: Mar. Obs. 1953, 01, Vol XXIII, no 159
Approx Location: Arabian Sea
Confidence In Sighting: High Confidence

1.136 South China Sea 1952

Observation Start Date: 03/19/1952
Observation Start Hour: 20:30 LOC
Observation End Date: 03/21/1952
Observation End Hour: (?)
Approximate Lat: 21 deg 50' N
Approximate Lon: 115 deg 15' E
Observing Ship/Sensor: SS India Mail
Observor(s): (?)
Description: [There is a note saying that this account comes from the US Hyd. Bull. but not which one.] On March 19, 1952, from 8:30 to 10:00 p.m. we passed through a glistening milk white sea. Not the usual vivid green-fire phosphorescence that is occasionally seen in tropic waters, but a sea of foamy, pure-white milk that was luminous enough to light up our top-hamper. There was none of the ordinary sparkling phosphorescence about it. It was just a shining pure white, as brilliant as a beaded movie screen. The surface appeared foamy; a solid unbroken white clear to the horizon, which was a sharp line against the overcast of the sky that looked inky-black in constrast. This white area was roughly oval in shape, lying NE and SW, and about 30 by 40 miles in extent. Its axis lay approximately 21 deg 30'N., 115 deg 00' E. to 22 deg 10' N., 115 deg 30' E. This area was visible more than 20 miles away, a clear streak on the horizon, as though the thick overcast was lifting to show the sky. The sea was smooth. A gentle to moderate breeze blew from the north. The sky was overcast. Temperature: sea 75 deg F.

to 77 deg F. at intake, air 63 deg. We passed through the extreme northern edge of this same patch, eastbound, March 21 around 2 a.m., where the water was merely a dirty white at the ship but the whole southern horizon held a glow like dawn. Thick overcast. Temperature: sea 70 deg, air 63 deg. In this part of the China Sea, at and near the edge of the continental shelf, where the colder northern waters meet and mingle with the tropic sea, I have often seen green-fire phosphorescence in bands, and also alternating bands of dirty-white and black water spaced evenly and regularly about a hundred yards apart; but this was the first time in more than 40 years at sea that I have seen a solid shining milk-white sea.
Reported In: E.W. Barlow's Records
Approx Location: South China Sea
Confidence In Sighting: High Confidence

1.137 Arabian Sea 1952 C

Observation Start Date: 07/15/1952
Observation Start Hour: 20:10 GMT
Observation End Date: 07/15/1952
Observation End Hour: (?)
Approximate Lat: 12 deg 11' N
Approximate Lon: 58 deg 38' E
Observing Ship/Sensor: SS Esperance Bay
Observor(s): W. Newport, Second Officer
Description: 15th July, 1952, 2010 G.M.T. The vessel ran into an area of phosphorescence, at least 20 miles across from E-W. A sample of water was obtained and found to contain hundreds of small luminous marine life known as plankton. Although the wind remained force 7, the sea moderated considerably in this area, as though the marine life acted as oil on the water. Position of ship: 12 deg 11'N, 58 deg 38'E.
Reported In: Mar. Obs. 1953, 07, Vol XXIII, no 161
Approx Location: Arabian Sea
Confidence In Sighting: High Confidence

1.138 Arabian Sea 1952 D

Observation Start Date: 08/29/1952
Observation Start Hour: 22:35 GMT
Observation End Date: 08/30/1952
Observation End Hour: 02:00 GMT
Approximate Lat: 12 deg 34' N
Approximate Lon: 43 deg 32' E
Observing Ship/Sensor: SS Clan Chattan
Observor(s): W. S. Clark, Second Officer
Description: 29th August, 1952, 2235 G.M.T. The vessel passed through a sharply defined line, extending across the horizon 350 deg-170 deg into an area of exceptionally brilliant phosphorescence. Air and sea temperatures fell rapidly from 89 deg F and 79 deg to 83 deg and 75 deg respectively on entering the area. Air temperature at 0000 on 30th was 81 deg while sea temperature remained constant. From 0000 both tempertures commenced to rise slowly and at 0100 air temp. was 83 deg, sea 77 deg, while the phosphorescence gradually dispersed. At 0200, when the phosphorescence was no longer visible, the air temp. was 86 deg and sea 81 deg. When in the brightest area the lights of passing ships were only distinguished with difficulty. Wind N, force 2-3. Sea slight. Cloud 2/8 Sc, excellt visibility. Position of ship at 2235: 12 deg 34'N, 43 deg 23'E.
Reported In: Mar. Obs. 1953, 07, Vol XXIII, no 161

Approx Location: Arabian Sea
Confidence In Sighting: High Confidence

1.139 Arabian Sea 1953 A

Observation Start Date: 08/15/1953
Observation Start Hour: 18:23 LOC
Observation End Date: 08/16/1953
Observation End Hour: 02:00 LOC
Approximate Lat: 11 deg 48' N
Approximate Lon: 56 deg 03' E
Observing Ship/Sensor: MV Glenartney
Observor(s): A. W. E. Johnson, Third Officer
Description: 15th to 16th August, 1953, 1823 to 0200 zone time. At 1823 milky phosphorescence was observed of a slight greenish colour, which had the same light value as the sky so that the horizon was difficult to discern. At 1830 the phenomenon brightened to a full milk-white. Spray looked darker than the surrounding sea. At 2004 the luminous appearance of the sea ceased abruptly, although a glow could be seen in the sky ahead. The appearance of the sea at 1823 and 1830 was repeated at 2023 and 2045 respectively. The full milk-white appearance reached maximum brightness at 2103 when the horizon was very sharply defined. At 2133 the brightness commenced to fade again until the light values of sea and sky were the same. More variations of brightening and fading occurred again from 2200 to 2203, but at 2219 the phosphorescence brightened so that the horizon was easily discernible, and these conditions remained much the same until 2320 when it all ceased abruptly. Maximum brightness occurred at 2310. Further patches of milky phosphorescence of moderate brightness were seen at 2345; these patches became continuous at about 0010, when the horizon was easily discernible until daybreak. It was noted that the phosphorescence was not carried aboard by spray, this appeared dark against the background of the sea. During the brightest periods the phosphorescence completely masked the wave crests and gave the sea an appearance of unnatural calm at once belied by wind, motion of the ship and spray coming aboard. Wind w-sw, strong breeze to moderate gale, rough sea, moderate swell. Visibility clear, no moon. Position of ship at 1823: 11 deg 48'N, 56 deg 03'E; at 0200: 13 deg 02'N, 54 deg 22'E
Reported In: Mar. Obs. 1954, 07, vol XXIV, no 165
Approx Location: Arabian Sea
Confidence In Sighting: High Confidence

1.140 Arabian Sea 1953 B

Observation Start Date: 09/01/1953
Observation Start Hour: 18:30 LOC
Observation End Date: 09/01/1953
Observation End Hour: (?)
Approximate Lat: 11 deg 56' N
Approximate Lon: 59 deg 01' E
Observing Ship/Sensor: SS Asturias
Observor(s): (?)
Description: Night clear & dark. Sea became vividly luminous, the glare steadily brightening until it had a sheen like milk. A similar phenomenon seen later in the evening. Posn: 11 deg 56' N, 59 deg 01' E.
Reported In: E.W. Barlow's Records
Approx Location: Arabian Sea
Confidence In Sighting: High Confidence

1.141 Arabian Sea 1953 C

Observation Start Date: 09/02/1953
Observation Start Hour: 20:40 LOC
Observation End Date: 09/03/1953
Observation End Hour: 04:45 LOC
Approximate Lat: 15 deg 15' N
Approximate Lon: 59 deg 08' E
Observing Ship/Sensor: SS Jalamayur
Observor(s): B.D. Kataria, Chief Officer; V. Pareira, Second Officer; P.S. Barve, Third Officer
Description: The whole sea from horizon to horizon looked luminous and bright. The phenomenon lasted through the night and was no more to be seen at the break of dawn. At about 2030 ATS, 1640 GMT, easterly horizon appeared to be illuminated as it may with shore lights beyond. In about 5 minutes the whole sea appeared to be luminous and white. It was very bright for the first hour but later on the brightness faded. It was last seen at 0445 ATS on 3 September. It was noted that during this time the sea had calmed considerably and remained so till later part of the day with glossy surface. SW'ly swell moderate to heavy was running through the phenomenon. There was no moon. The sky remained mainly clear. Sea Temp. rose from 74 deg F to 76 deg F and remained constant at 76 deg F. Air. Temp. Dry Bulb 78 deg F and wet bulb 74 deg F.
Reported In: Indian Journal of Meteorology and Geophysics 1954, Vol. 5 (1); Tim Wyatt Unpublish Notes/Paper
Approx Location: Arabian Sea
Confidence In Sighting: High Confidence

1.142 Arabian Sea 1954

Observation Start Date: 08/25/1954
Observation Start Hour: 01:45 LOC
Observation End Date: 08/25/1954
Observation End Hour: 02:30 LOC
Approximate Lat: 16 deg 00' N
Approximate Lon: 54 deg 20' E
Observing Ship/Sensor: SS British Sailor
Observor(s): J. A. Surman, Second Officer
Description: 25th August, 1954, 0145 A.T.S. The sea was glassy calm, but on the horizon to the NE there appeared a white bank as of fog which spread towards the vessel. After about 10 min the whole sea surface over an arc of 180 deg from right forward to right aft on the port side of the ship was covered as if by a coating of milk. On the starboard side the sea surface had a normal appearance. This phenomenon lasted for 30 min, when the sea surface gradually resumed its normal colour, a very dark green. After a further 10 min the phenomenon returned and lasted for 45 min when it finally disappeared. Neither the bow wave nor the wake of the vessel showed any marked phosphorescence. Wind at 0145 SSW, 3-4 kt, which suddenly dropped. Sky heavily overcast with low Nb; visibility throughout 10 miles. Air and sea temp 74 1/2 deg F. Position of ship: 16 deg 00'N, 54 deg 20'E.
Reported In: Mar. Obs. 1955, 07, Vol XXV, no 169
Approx Location: Arabian Sea
Confidence In Sighting: High Confidence

1.143 North Atlantic 1954

Observation Start Date: 10/25/1954
Observation Start Hour: 23:20 UNK
Observation End Date: 10/25/1954
Observation End Hour: 23:26 UNK
Approximate Lat: 28 deg 12' N
Approximate Lon: 49 deg 06' W
Observing Ship/Sensor: MV Hudson Deep
Observor(s): R. Barron, Third Officer
Description: 25th October, 1954, from sunset througout the night, unusually brilliant phosphorescence was observed. A ship's masthead light was only detectable at midnight by its persistently steady light. At 2320 the entire surface of the sea was aglow with a milky-green appearance, exceptionally bright along the tops of the swell; the ship's side was illuminated by it and had a dazzling effect on the eyes. This lasted until 2326, when it slowly faded until the bow wave and wave crests were phosphorescent as before. The night was otherwise very dark and clear. Position of ship: 28 deg 12'N, 49 deg 06'W.
Reported In: Mar. Obs. 1955, 10, Vol XXV, no 170
Approx Location: North Atlantic
Confidence In Sighting: High Confidence

1.144 Arabian Sea 1955 A

Observation Start Date: 02/19/1955
Observation Start Hour: 19:30 LOC
Observation End Date: 02/19/1955
Observation End Hour: 21:20 LOC
Approximate Lat: 12 deg 02' N
Approximate Lon: 51 deg 12' E
Observing Ship/Sensor: SS Clan Macdraugne (12864)
Observor(s): (?)
Description: 19th Feb. 1955. 1930 Ship's time. Passed into an area of phosphorescence which glowed, having very few sparkling particles in it. At 2000 it extended from horizon to horizon giving the sea a white appearance and defining the coastline very clearly. The sky was black against the sea, being moon-less and mostly cloudless. At 2120, vessel passed out of the phosphorescent area, but phos. continued to be seen inshore as far as Alula Light. Posn at 1930: 12 deg 02' N, 51 deg 12' E; at 2120: 12 deg 06' N, 51 deg 52' E.
Reported In: E.W. Barlow's Records
Approx Location: Arabian Sea
Confidence In Sighting: High Confidence

1.145 Arabian Sea 1955 B

Observation Start Date: 03/28/1955
Observation Start Hour: 20:00 GMT
Observation End Date: 03/28/1955
Observation End Hour: 20:15 GMT
Approximate Lat: 15 deg 55' N
Approximate Lon: 59 deg 06' E
Observing Ship/Sensor: MV Tarantia
Observor(s): C. Boyle, Second Officer
Description: 28th March, 1955, 2000-2015 G.M.T. At first the sea around the ship was observed to

be light green in colour, which seemed to be in large patches. At 2005 several points of light appeared in the sea about 500 yd ahead of the ship. These points suddenly increased in size and formed circles about 300-400 ft in diameter. Within these circles the sea was a very bright milky-white, which faded to a faint glow as the ship passed by and disappeared as the patches fell astern. The last patch was seen at 2014 and disappeared at 2015. Sky cloudless, good visibility. Air temp. 79 def F, sea 83 deg. Position of ship: 15 deg 55'N., 59 deg 06'E.
Reported In: Mar. Obs. 1956, 01, Vol XXVIII, no 171
Approx Location: Arabian Sea
Confidence In Sighting: Very Low Confidence

1.146 West Africa 1957

Observation Start Date: 05/01/1957
Observation Start Hour: 03:05 GMT
Observation End Date: 05/01/1957
Observation End Hour: 03:30 GMT
Approximate Lat: 12 deg 18' N
Approximate Lon: 17 deg 36' W
Observing Ship/Sensor: SS Baron Maclay
Observor(s): James Morrison, Chief Officer
Description: 1st May, 1957. At 0305 G.M.T. a brilliant display of phosphorescence was seen which was quite breathtaking in its intensity. At first a faint and uniform luminosity covered the sea surface, which later became a blaze of vivid lights twinkling and flashing in an amazing manner, and of sufficient intensity to illuminate the ship's side. By 0330 the phosphorescence had disappeared. During the period of activity it was noticed that there was a strong smell as of stagnant seaweed. Air temp 68 deg F, sea 72 deg--a rise of 4 deg in the past 6 hours. Position of ship: 12 deg 18'N., 17 deg 36'W.
Reported In: Mar. Obs. 1958, 04, Vol XXVIII, no 180
Approx Location: West Africa
Confidence In Sighting: Low Confidence

1.147 South Pacific 1957

Observation Start Date: 09/26/1957
Observation Start Hour: 03:00 GMT
Observation End Date: 09/26/1957
Observation End Hour: 12:00 GMT
Approximate Lat: 10 deg 54' S
Approximate Lon: 138 deg 24' W
Observing Ship/Sensor: MV Condesa
Observor(s): D. R. Williams, Second Officer
Description: 26th September, 1957. Between 0300 and 1200 G.M.T. very marked phosphorescence was observed in the sea. Large blobs of luminescence up to about 6 in. in diameter were frequently seen while the whole surface of the sea, as far as the horizon, appeared to glow with a sickly green light. Phosphorescence was also quite noticeable in the swimming pool, which is kept continuously full by means of the deck service line. The log line appeared to drip bluish-green fire as it tightened and slackened in the water. The display ceased exceedingly abruptly as though a switch had been turned off, instead of fading away gradually as is often the case. Position of ship at 0600 G.M.T.: 10 deg 54'S, 138 deg 24'W.
Reported In: Mar. Obs. 1958, 07, Vol XXVIII, no 181
Approx Location: South Pacific

Confidence In Sighting: Low Confidence

1.148 Uruguay 1958

Observation Start Date: 04/10/1958
Observation Start Hour: 23:00 GMT
Observation End Date: 04/11/1958
Observation End Hour: 03:00 GMT
Approximate Lat: 34 deg 43' S
Approximate Lon: 54 deg 00' W
Observing Ship/Sensor: MV Durango
Observor(s): (?)
Description: 10th April 1958, 2300 GMT to 11th Apr., 0300. Very marked phos. all around the ship during these four hours, almost resembling a snow-field. Sometimes so bright as to make it difficult to pick out other ships' lights. Phos. near ship very bright, pale blue at the base and white at the top. Posn: 34 deg 43' S, 54 deg 00' W.
Reported In: E.W. Barlow's Records
Approx Location: Uruguay
Confidence In Sighting: Low Confidence

1.149 Arabian Sea 1958 A

Observation Start Date: 08/19/1958
Observation Start Hour: 03:15 LOC
Observation End Date: 08/19/1958
Observation End Hour: 03:40 LOC
Approximate Lat: 13 deg 04' N
Approximate Lon: 54 deg 05' E
Observing Ship/Sensor: MV Trevince
Observor(s): W. R. Clipson, Second Officer
Description: 19th August, 1958. Between 0315 and 0340 S.M.T., the vessel passed through an area of phosphorescence. The sea changed gradually from its normal black appearance to a milky white or pearly grey, so nearly the same shade as the sky that it was impossible to distinguish the horizon, which both before and after crossing the area was clearly defined. Although the whole sea appeared light, it was not highly luminous, as occasional specks of phosphorescence showed up clearly against it, but it was sufficiently bright to cause wave crests and the bow wave to appear a dull, dirty white. In spite of the fact that wave crests were to be seen, the sea as a whole was smoother during the passage of this area than elsehwere, and the vessel only once shipped spray, whereas, before and after, she frequently shipped both spray and light water along the weather side. Air temp. 77.6 deg F. Wind S., force 4. Position of ship: 13 deg 04'N, 54 deg 05'E.
Reported In: Mar. Obs. 1959, 07, Vol XXIX, no 185
Approx Location: Arabian Sea
Confidence In Sighting: High Confidence

1.150 Arabian Sea 1958 B

Observation Start Date: 08/20/1958
Observation Start Hour: 20:00 GMT
Observation End Date: 08/20/1958
Observation End Hour: 20:20 GMT

Approximate Lat: 16 deg 58.5' N
Approximate Lon: 57 deg 35.5' E
Observing Ship/Sensor: SS Jalarejendra
Observor(s): J.S. Lambda, Second Officer; A.S. Purandare, Third Officer
Description: Wint SW'ly Force 2. Sea 2', swell SW'ly, height of waves 12 feet. Bar-1002.5 mb. Temp. 77 deg F. Wet Bulb 76 deg F. Past Weather - Altostratus and Stratocumulus clouds gradually spreading over the sky. Present weather-Ugly, threatening sky, overcast with Nimbostratus and Altostratus clouds. Visibility - Modera, poor. The appearance of the sea was peculiarly glassy. Although the sky was completely covered with clouds, a diffused light was seen all over the sea, giving it an apperance of ground-glass. The phenomenon lasted for 20 minutes. After which the sea became dark (the colour of the sky).
Reported In: Indian Journal of Meteorology and Geophysics 1959, Vol. 10. (3); Tim Wyatt, Unpublished Notes/Paper
Approx Location: Arabian Sea
Confidence In Sighting: High Confidence

1.151 West Africa 1958

Observation Start Date: 10/12/1958
Observation Start Hour: 02:30 GMT
Observation End Date: 10/12/1958
Observation End Hour: (?)
Approximate Lat: 4 deg 32' N
Approximate Lon: 8 deg 50' W
Observing Ship/Sensor: SS Calabar
Observor(s): B. P. Telfer, Second Officer
Description: 12th October, 1958. At 0230 G.M.T. a milky white glow was observed on the sea surface, in the form of a band about 200 ft across and stretching for approximately 3 miles in an E.-W. direction. When the ship cut across the band the sea did not break up into phosphorescence, nor did the light from an Aldis lamp have any effect when shone upon it. The echo sounder revealed no sign of any fish: the depth of the water was 48 fm. Air temp. 74 deg F., sea 80 deg. Wind S., force 3. Overcast with rain showers. Sea slight. Position of ship: 4 deg 32'N., 8 deg 50'W.
Reported In: Mar. Obs. 1959, 10, Vol XXIX, no 186
Approx Location: West Africa
Confidence In Sighting: Low Confidence

1.152 Arabian Sea 1958 C

Observation Start Date: 11/14/1958
Observation Start Hour: 16:30 GMT
Observation End Date: 11/14/1958
Observation End Hour: 17:00 GMT
Approximate Lat: 16 deg 33' N
Approximate Lon: 54 deg 25' E
Observing Ship/Sensor: SS City of Lichfield
Observor(s): P. G. Pike, Third Officer
Description: 14th November, 1958. Long bands of milky phosphorescence were observed between 1630 and 1700 G.M.T. As the first of them appeared, the rather bright phosphorescenct glow on the sea, which had been present since twilight, disappeared. The vessel passed through six bands at 2032, 2037, 2042 1/2, 2051, 2057, and 2102 G.M.T respectively. Each was between 50 and 70 ft wide and, as

they passed, small, twinkling spots, rather like stars, were seen. The bands seemed to be quite straight to the northward, but to the S. they were wavy looking and, near thehorizon they curved towards the W. They were estimated to extend about 5 or 6 miles on either side of the ship. Air temp 78 deg F, sea 80 deg. Wind, light airs. Slight E'ly swell. Speed of vessel 10.7 kt. Position of ship at 1630: 16 deg 33'N., 54 deg 25'E.
Reported In: Mar. Obs. 1959, 10, Vol XXIX, no 186
Approx Location: Arabian Sea
Confidence In Sighting: Low Confidence

1.153 Arabian Sea 1959 A

Observation Start Date: 03/03/1959
Observation Start Hour: 20:00 GMT
Observation End Date: 03/04/1959
Observation End Hour: 00:00 GMT
Approximate Lat: 21 deg 28' N
Approximate Lon: 61 deg 18' E
Observing Ship/Sensor: MV British Purpose
Observor(s): D. C. Williams, Second Officer
Description: 3rd March, 1959, at 2000 G.M.T. The vessel was passing through normal phosphorescence only visible in her own wash. This brilliance slowly increased and at about 2100 the sea all round the ship began to sparkle. This effect was due to thousands of little momentary splashed of phosphorescence close to the ship, which appeared to be caused by the rapid movement of small fish or other creatures, as some splashes of light had short tails but each was visible for only an instant. At any one time there were thousands of time visible and this persisted until well after 2400. By 2145 they had attained a brilliance difficult to believe, almost like burning magnesium, also the vessel's bow wave was dazzling and by its light it was possible to read. At 2155 the vessel crossed a single band of phosphorescence. This was visible for at least a mile, lying in an E.-W. direction and varying in width from 50-100 ft. It was very dull compared with the other illuminations with a steady even glow. As the vessel passed through it, the bow wave did not vary in brilliance at all. Soon after this the general brilliance began to decrease very slowly. The moon, in its last quarter, rose at 2230. At 2300 the bow wave of another vessel proveeding in the opposite direction could be clearly seen at over 7 miles with binoculars. At 2345 a light NW. breeze sprang up and the moon became quite bright but this is no way affected the general display. Small waves formed but did not break. Prior to this, apart from the vessel's wash, there had been absolutely no movement of the sea surface. The sample of sea water taken, when placed in an enamel bucket and agitated, glowed brilliantly and each independent speck of phosphorescence could be seen. Traces of phosphorescence were visible in the sample for two days. Unfortunately the bottle containing it was subsequently smashed. Position of ship at 2200: 21 deg 28'N., 61 deg 18'E.
Reported In: Mar. Obs. 1960, 01, Vol XXX, no 187
Approx Location: Arabian Sea
Confidence In Sighting: High Confidence

1.154 Arafura Sea 1959

Observation Start Date: 07/24/1959
Observation Start Hour: 11:00 GMT
Observation End Date: 07/24/1959
Observation End Hour: 14:00 GMT
Approximate Lat: 8 deg 45' S
Approximate Lon: 128 deg 47' E

Observing Ship/Sensor: SS Caltex Canberra
Observor(s): J. J. Purchall, Third Officer
Description: 24th July, 1959. At 1100 G.M.T. the sea ahead was seen to be brilliantly lit up and at 1115 the vessel entered an area of phosphorescence, which, from a distance, bore a resemblance to sea fog. From horizon to horizon, the entire sea appeared to be milky white, having an intensity which varied from place to place. Numerous patches of bright phosphorescence were observed in the bow wave. A sample of water was taken in a bucket and when examined in the dark a great number of minute organisms were seen in suspension, apparently stationary. When the surface of the water was agitated the brilliance increased and the small particles clustered together to form patches about one inch in diameter. The brilliance was maintained for 30-40 min, but, after an hour nothing more could be seen. The ship remained in the milky sea until 1400, the phosphorescence gradually becoming weaker, until only occasional patches showed in the bow wave. From 1115 to 140, the distance steamed was 33 miles. The sea temp. remained constant at 78.5 deg F. Wind ESE, force 4; sea slight to moderate. Position of ship: 8 deg 45'S., 128 deg 47'E. (15 miles south of Sermata Island). [There is a note from E.W. Barlow where he doubts this is a true milky sea because the bucket observations hints the colour of the sea was green but due to the low intensity of the light appeared white. I am not sure why the bucket observation supports this conclusion.]
Reported In: Mar. Obs. 1960, 07, Vol XXX, no 189
Approx Location: Arafura Sea
Confidence In Sighting: High Confidence

1.155 Arabian Sea 1959 B

Observation Start Date: 08/05/1959
Observation Start Hour: 21:00 GMT
Observation End Date: 08/05/1959
Observation End Hour: 22:30 GMT
Approximate Lat: 11 deg 28' N
Approximate Lon: 54 deg 06' E
Observing Ship/Sensor: SS Oxfordshire (13453)
Observor(s): (?)
Description: 5th Aug., 1959. At 2100 GMT entered a field of phosphorescence which gave the ocean a milky white icy appearance. Wave crests were difficult to distinguish breaking, even close to the ship. On leaving the field at 2210, the horizon showed as a bright ring. Ten minutes later the vessel re-entered phosphorescence; this faded at 2230. Posn 11 deg 28' N, 54 deg 06' E.
Reported In: E.W. Barlow's Records
Approx Location: Arabian Sea
Confidence In Sighting: High Confidence

1.156 Arabian Sea 1959 C

Observation Start Date: 08/12/1959
Observation Start Hour: 21:00 GMT
Observation End Date: 08/12/1959
Observation End Hour: 21:15 GMT
Approximate Lat: 13 deg 10' N
Approximate Lon: 54 deg 03' E
Observing Ship/Sensor: SS Oranges[?] (13149)
Observor(s): (?)
Description: 12th Aug., 1959. Between 2100 and 2115 GMT passed through dense phosphorescence

extending to horizon in all directions. Water had the appearance of dense snow drift as seen by night on land. Posn. 13 deg 10' N, 54 deg 03' E.
Reported In: E.W. Barlow's Records
Approx Location: Arabian Sea
Confidence In Sighting: High Confidence

1.157 Oman 1960

Observation Start Date: 01/04/1960
Observation Start Hour: 22:00 GMT
Observation End Date: 01/04/1960
Observation End Hour: (?)
Approximate Lat: 22 deg 30' N
Approximate Lon: 59 deg 51' E
Observing Ship/Sensor: SS Venassa
Observor(s): (?)
Description: 4th January 1960. At 2200 GMT, while rounding Ras al Hadd at a distance of 5 miles, the vessel passed through a large area of 'white water', in which there were numerous spots of bright light reminiscent of fairy lights. The most concentrated areas of phosphorescence seemed to lie towards the coast and parallel with it, between Ras al Khabba and Ras al Hadd: it was also present in several bands which stretched away from the coast. Phosphorescence was still seen when north of Ras al Hadd but it presented no unusual features. Sea temp. 74 deg F.; wind, light and variable. Position of ship: 22 deg 30'N, 59 deg 51'E. [There is a note from E.W. Barlow commenting that the true 'White Water' is a summer phenomenon and this is not an ordinary manifestation.]
Reported In: Mar. Obs. 1961, 01, Vol XXXI, no 191
Approx Location: Oman
Confidence In Sighting: High Confidence

1.158 Arabian Sea 1960

Observation Start Date: 04/24/1960
Observation Start Hour: 21:50 GMT
Observation End Date: 04/24/1960
Observation End Hour: (?)
Approximate Lat: 17 deg 46' N
Approximate Lon: 67 deg 50' E
Observing Ship/Sensor: SS Kinia
Observor(s): G. Arbema, Captain
Description: [This account was acquired as a faded photocopy of a hand written note marked as a Milky Sea by Tim Wyatt.] 24 April 1960. 21.50 GMT "melkzee" [...] Pos: 17 deg 46'o N 67deg50',o O Tyd a/b = 24/3 02u 30mt
Reported In: Tim Wyatt, Unpublished Notes/Paper
Approx Location: Arabian Sea
Confidence In Sighting: High Confidence

1.159 North Atlantic 1960

Observation Start Date: 04/30/1960
Observation Start Hour: 01:20 GMT
Observation End Date: 04/30/1960

Observation End Hour: 01:30 GMT
Approximate Lat: 11 deg 10' N
Approximate Lon: 17 deg 16' W
Observing Ship/Sensor: MV Ripon
Observor(s): W. Baxter, Second Officer
Description: 30th April 1960. Between 0120 and 0130 GMT the vessel passed through an area of intense phosphorescence in which there were patches of 'milky sea' and bright flashing lights: in other parts the phosphorescence showed a steady glow. Wave tops were clearly visible when they broke, emitting a greenish light, and the bow wave of a ship two miles away was plainly seen. Echo soundings showed no bottom when in the area, but soon after leaving it the depth changed quickly from 80 to 50 fm. Sea temp. 60 deg F. Position of ship: 11 deg 10'N, 17 deg 16'W.
Reported In: Mar. Obs. 1961, 04, Vol XXXI, no 192
Approx Location: North Atlantic
Confidence In Sighting: Low Confidence

1.160 Java 1961

Observation Start Date: 08/31/1961
Observation Start Hour: 20:19 LOC
Observation End Date: 08/31/1961
Observation End Hour: 23:00 LOC
Approximate Lat: 7 deg 20' S
Approximate Lon: 105 deg 17' E
Observing Ship/Sensor: MV Sarpedon
Observor(s): J. Bathgate, Third Officer
Description: 31st August 1961. At 2019 SMT (1249 GMT), whilst on a course of 160 deg at 15 kt., the ship crossed a slightly irregular but clearly defined line on the sea surface. Beyond the line, which lay approx. E-W, the surface seemed to be uniform grey. No effect on the steering was noticed but the sea temp. dropped from 81 deg F at 2000 to 76 deg at 2030. As the ship proceeded, they grey colour gradually brightened to a milky shade and even seemed to glow faintly. It was at its brightest at 2050 approx., when it seemed that the air was reflecting a little radiance. At no time did the ship become illuminated by the glow; it fact it seemed darker by contrast. Around 2050 some of the more usual forms of phosphorescence appeared: 'spangles' and 'underwater explosions' in the ship's wash. The main phenomenon was unaffected by the disturbed water except that the edges of the wash looked dark as though the milky colour was all on the surface and was being pushed aside to show the normal colour underneath. After the peak of brightness was passed the colour changed rapidly to a dull grey but it was not until after 2300 that the last traces disappeared. By this time the sea temperature had risen to 78 deg. A sample was taken at 2040 and was found to contain hair-like object, khaki in colour, about 1/2 in. long. They were not thickly clustered. When the phenomenon was ifrst observed the ship was 20 miles from the 100 fm. line, in a charted depth of 1,200 fm. A westerly set of 1/2-1 1/2 kt. was experienced that night and the following day. Position of ship: 7 deg 20'S, 105 deg 17'E.
Reported In: Mar. Obs. 1962, 07, Vol XXXII, no 197
Approx Location: Java
Confidence In Sighting: High Confidence

1.161 Sri Lanka 1962 A

Observation Start Date: 02/08/1962
Observation Start Hour: 01:30 LOC
Observation End Date: 02/08/1962

Observation End Hour: (?)
Approximate Lat: 5 deg 54' N
Approximate Lon: 83 deg 10' E
Observing Ship/Sensor: MV Glengyle
Observor(s): M. J. Steele, Seconf Officer
Description: 8th February 1962. From 0130 SMT onwards, when the ship was about 90 miles east of Ceylon, the colour of the sea changed to a milky grey which gradually became a brilliant off-white, rather suggestive of a snow covered plain. during the period of greatest brightness it was possible to read a book on the wing of the bridge. Spots of bright red light were seen close to the ship when an Aldis lamp was directed on to the sea surface. As the sea was white and the ship and sky both very dark, the impression gained was that everything was being seen in negative. Some low, black-looking Cu. were visible in the north-west. The whole effect was rather ghostly and only once before, off the south coast of Japan, had I seen anything similar. On that occasion the phosphorescence was perhaps more brilliant, but it was not so complete in coverage as in the present instance. Wind, light and variable. Sea smooth with long low swell from NE. Position of ship: 5 deg 54'N, 83 deg 10'E.
Reported In: Mar. Obs. 1963, 01, Vol XXXIII, no 199
Approx Location: Sri Lanka
Confidence In Sighting: High Confidence

1.162 Sri Lanka 1962 B

Observation Start Date: 02/10/1962
Observation Start Hour: 23:20 LOC
Observation End Date: 02/10/1962
Observation End Hour: 01:10 LOC
Approximate Lat: 05 deg 51' N
Approximate Lon: 82 deg 38' E
Observing Ship/Sensor: MS Conota Reith
Observor(s): (?)
Description: Gegen 23.20 uhr. verfärbte sich der dunkel klare, fast wothenlose Himmel im Osten in ein helles graugells, das sich schnell über den horigont von Nord über ost bis s¨dwest verbreitete. Mit [...] helligkeit nahon das Wasser eine milchige fabre an. Die sea weurde träge; kein phosphoresgierenden Aufleuchten des Kielwasser und der Bigwelle. Alles wirkte wie dicken "Buttermilchlmei." Die helligkeit was deast stark, daß man fast lesen korunte. Dort ein eigenantige, an schewefel erinnernder genuch. Der wind, der vor de eischeinung ONO Stärbe 2 war, schlief volkemmen ein. Die wassertemperatur bliel ien veränderk +27 C. Gegen 00.10 uhr. im SO wind NO tangsame Kimmelildung; der Himmel nimmt stetig an Nachtfarbe gu. Gegen 00.45 uhr. stellten wis fest, daß das Wassen denkle Flecken geigte. Un 01.10 Uhr. hatte sich die erscheinung aufgelëst. Der wind frischte auf ONO stärke 3-4 auf. Eine Wasserprobe, die genommen wurde, geige keine Veränderung des Seewassers. Es was keine erscheinung, die an Nordlicht erimnete.
Reported In: E.W. Barlow's Records
Approx Location: Sri Lanka
Confidence In Sighting: High Confidence

1.163 Canada 1962

Observation Start Date: 05/27/1962
Observation Start Hour: 02:00 GMT
Observation End Date: 05/27/1962
Observation End Hour: (?)

Approximate Lat: 48 deg 45' N
Approximate Lon: 62 deg 48' W
Observing Ship/Sensor: SS Beaverlake
Observor(s): D. J. F. Bruce, Fourth Officer
Description: 27th May 1962. At about 0200 GMT during heavy continuous rain and reduced visibility, there was seen about a mile ahead what appeared to be a fog bank. The night was very dark with a heavily overcast sky making this whitish-looking patch easily discernible. On closer approach, the look-out on the forecastle head reported the patch as ice, but when the vessel entered the area thin lines or shreds of phosphorescent material were found to be floating on, or near, the surface of the sea. The whole area, about 1/4 mile long and 100 yd. wide emitted a dull green-white glow. Other similar smaller patches were seen during the following three hours. The shreds of material were probably less than 1 in. across and varied in length from 1 to 4 ft. They lay in a direction 040 deg-220 deg, their distance apart being from 6 in. to 4 ft.: at close quarters the shreds resembled small then neon lights. Sea tmep. 38 deg F. Wind variable, force 1-2, Sea rippled. Continuous rain. Course 118 deg at 16 kt. Position of ship: 60 miles E'S of Cape Gaspé [Possibly 'Mareel']
Reported In: Mar. Obs. 1963, 04, Vol XXXIII, no 200
Approx Location: Canada
Confidence In Sighting: High Confidence

1.164 Java 1963

Observation Start Date: 08/15/1963
Observation Start Hour: (?)
Observation End Date: 08/15/1963
Observation End Hour: (?)
Approximate Lat: 08 deg 43' S
Approximate Lon: 105 deg 46' E
Observing Ship/Sensor: MV Kweilin
Observor(s): (?)
Description: Captain A. Harper, Fremantle toward Singapore. 15th August 1963, in 08 deg 43'S, 105 deg 46'E (120 miles S.S.E. of Java Head). During the middle watch on a clear moonless night with excellent visibility the vessel passed through a large area of sea with unusual milky white appearance, which stretched as far as the eye could see, giving a good firm horizon. At times the whiteness was so pronounced that the bow wave and breaking seas were barely discernable. No unusual amount of surface phosphorescence was present although occasional flecks were seen in the water alongside the ship. A bucket of water drawn from overside proved on examination to have no foreign matter suspended in it and was of normal temperature and density. In this area sometime ago a similar observation was made, but at that time the bow wave and breaking seas appeared black.
Reported In: Letter to Dr. Kay
Approx Location: Java
Confidence In Sighting: High Confidence

1.165 India 1963

Observation Start Date: 08/19/1963
Observation Start Hour: 21:20 GMT
Observation End Date: 08/19/1963
Observation End Hour: (?)
Approximate Lat: 12 deg 24' N
Approximate Lon: 74 deg 32' E

Observing Ship/Sensor: SS Caltex London (17268)
Observor(s): (?)
Description: 19th August 1963 at 2120 GMT in 12 deg 24'N, 74 deg 32'E. Passed through a very bright circular patch of phosphorescence. The circle, about 300 feet in diameter, consisted of a band of phosphorescence about 50 feet in width form a complete circle around a dark and clear patch of water about 200 feet in diameter. About half a mile further the vessel passed through another band of phosphorescence, again about 50 feet in width, forming a curved segment of a circle over an arc of approximately 90 deg, the band being about 600 feet in length. In both patches the sea appeared to be very calm compared to the general state of the sea at the time.
Reported In: Letter to Dr. Kay
Approx Location: India
Confidence In Sighting: Very Low Confidence

1.166 Arabian Sea 1963

Observation Start Date: 08/20/1963
Observation Start Hour: 19:15 LOC
Observation End Date: 08/20/1963
Observation End Hour: 21:00 LOC
Approximate Lat: 14 deg 30' N
Approximate Lon: 55 deg 30' E
Observing Ship/Sensor: SS Jalaketu
Observor(s): J.C. Lobo, Chief Officer; A.A. Verkhedkar, Third Officer
Description: 20 August 1963. Position 14.5 deg N, 55.5 deg E. Between 1915 to 2100 S.M.T. during the twilight period, the whole sea surface became light and luminous. This brightness and the colour of the sea matched exactly with that of the sky and as a result the horizon became hazy and afterwards faded out completely. The 'White Horses' previously seen also disappeared and whole atmosphere became milky white, giving an appearance of thick fog. After about an hour, the sea became brighter compared to the darkening sky and the horizon could be made out again. The brightness was even all over the sea surface and it appered like a ground glass illuminated from underneath. This phenomenon lasted for another half hour after which the brightness started reducing. By 2100 S.M.T. the sea became normal again. No usual phosphorescence was seen that night. The sky was overcast, southwesterly wind, Force 4 to 5 throughout. There was no change in air or sea temperatures. Dry Bulb 25 deg C, Wet Bulb 23.3 deg C, Sea Temp 25.6 deg C. A sample of sea water was obtained and it contained very thin luminous specks.
Reported In: Indian Journal of Meteorology and Geophysics 1964, vo. 15 (3); Tim Wyatt Unpublished Notes/Paper
Approx Location: Arabian Sea
Confidence In Sighting: High Confidence

1.167 Somalia/Socotra 1963 A

Observation Start Date: 08/23/1963
Observation Start Hour: 22:15 GMT
Observation End Date: 08/24/1963
Observation End Hour: 00:05 GMT
Approximate Lat: 17 deg 58' N
Approximate Lon: 58 deg 08' E
Observing Ship/Sensor: SS Caltex Edinburgh (18242)
Observor(s): (?)

Description: Persian Gulf towards Suez. 23rd August, 1963 (confirmed 1963) at 2215 G.M.T. in 17 deg 58'N, 58 deg 08'E to 24th August, 1963, at 0005 in 17 deg 26'N, 58 deg 08'E. Vessel steaming south into rough head sea and swell, visibility approximately 7-8 miles, wind 190 deg 18 knots. At about 2215 G.M.T. it was noticed that a band of light very similar to ice blink was illuminating the horizon ahead of the ship. From 2215 until 2240 the low stratus clouds which had persisted all day dispersed until there were only a few scattered cumulus in the sky. At 2245 the sea around the ship became a light grey in colour and hazy in appearance. It was thought at first to be low fog, but there was no loom around any of the ship's lights and a light shone into the water indicated none. Stars low on the horizon were clearly visible. As the vessel steamed on the fog effect thickened and seemed to rise, masking the horizon ahead of the ship, at the same time the sea all around became pure white in colour. The fog effect was so strong by 2300 that the master ordered the radar to be switched on. Between 2300 and 2320 the fog effect thinned and finally disappeared but the sea remained the pure white colour. The horizon was clearly visible at 2330 as a firm line of contrast between the white sea and the dark sky. Even though the phenomenon was visible as far as the horizon, there was no apparent illuminating effect from it. The ship's hull and rigging were clearly silhouetted against the sea, yet no details could be picked out. The effect can be likened to being in snow on a dark clear night, where everything is silhouetted and yet no details are visible. The bow wave was barely visible and the rest of the sea appeared a uniform white with no signs of breaking waves visible. Occasional blobs of phosphorescence in the bow wave showed up just as clearly on a normal dark moonless night. A bucket of sea water revealed nothing to the naked eye, yet when agitated a few small specks of phosphorescence were visible. At 2340 G.M.T. a band of dark coloured water was seen in the south east, which soon covered the horizon ahead of the ship and at 2344 the ship passed through this band which was approximately 500 yards wide and then back into the white water once more. The black, or clear, water was seen approaching from the south east again at 0000 and by 0005 all the sea was back to its normal colour, with the bow wave visible again. A faint glow remained in the sky behind the vessel for 10 minutes but by 0020 all signs of the phenomenon had disappeared.
Reported In: Letter to Dr. Kay
Approx Location: Somalia/Socotra
Confidence In Sighting: High Confidence

1.168 Somalia/Socotra 1963 B

Observation Start Date: 08/25/1963
Observation Start Hour: 22:00 GMT
Observation End Date: 08/26/1963
Observation End Hour: 00:40 GMT
Approximate Lat: 11 deg 50' N
Approximate Lon: 58 deg 20' E
Observing Ship/Sensor: SS Benvorlich (17421)
Observor(s): (?)
Description: Aden towards Singapore. 25th August, 1963, at 2200 G.M.T. in 11 deg 50'N, 58 deg 20'E. Ran into heavily phosphorescence sea marked by a sharp demarcation line. Fifteen minutes later the sea was phosphorescence from horizon to horizon, colour greeny grey. Waves and swell apparently disappeared i.e. were indistinguishable thouhg ship continued to pitch and roll. Cloudless, fine and clear, wind S.W. force 6. At 2245 the sea became normal. 26th August, 1963, at 0010 G.M.T. at 11 deg 22'N, 59 deg 26'E. Ran into phosphorescence sea which gave off a diffused glow, no small bright patches of phosphorescence seen even in ship's wake. The diffused glow stretched form horizon to horizon was grey green in colour. The sea disappeared though wind did not diminish and vessel continued to pitch and roll. This phenomenon lasted for 30 minutes when the sea returned to normal with a fairly sharp demarcation line. Cloudless fine and clear. Wind S.W. force 6.
Reported In: Letter to Dr. Kay

Approx Location: Somalia/Socotra
Confidence In Sighting: High Confidence

1.169 Galapagos 1963

Observation Start Date: 09/29/1963
Observation Start Hour: 02:00 GMT
Observation End Date: 09/29/1963
Observation End Hour: 11:00 GMT
Approximate Lat: 2 deg 42' S
Approximate Lon: 91 deg 18' W
Observing Ship/Sensor: SS Corinthis (17554)
Observor(s): (?)
Description: Balboa towards Auckland. 29th September, 1963, between 0200 and 1100 G.M.T. At 0900 G.M.T. in 2 deg 42'S, 91 deg 18'W, the sea was observed to take on a milky appearance with a faint luminous glow. This phenomenon was visible from horizon to horizon and lasted until 1100. During this period the wet, air and sea temperatures remained nearly constant at 66 deg, 70 deg, and 70.5 deg respectively. Earlier, the sea temperaturre had dropped from 76 deg at 0200 to 70 deg at 0600.
Reported In: Letter to Dr. Kay
Approx Location: Galapagos
Confidence In Sighting: High Confidence

1.170 Somalia/Socotra 1964 A

Observation Start Date: 01/18/1964
Observation Start Hour: 21:55 GMT
Observation End Date: 01/18/1964
Observation End Hour: 22:25 GMT
Approximate Lat: 16 deg 38' N
Approximate Lon: 55 deg 42' E
Observing Ship/Sensor: SS British Ambassador (18051)
Observor(s): (?)
Description: Suez towards Mina al Ahmadi. 18th January, 1964, at 2155 G.M.T. in 16 deg 38'N, 55 deg 42'E. The whole sea took on a milky white appearance within a few minutes; the sea standing out clearly against the sky until at 2225 G.M.T. it suddenly disappeared.
Reported In: Letter to Dr. Kay
Approx Location: Somalia/Socotra
Confidence In Sighting: High Confidence

1.171 Somalia/Socotra 1964 B

Observation Start Date: 04/13/1964
Observation Start Hour: 21:45 GMT
Observation End Date: 04/13/1964
Observation End Hour: (?)
Approximate Lat: 10 deg 36' N
Approximate Lon: 59 deg 08' E
Observing Ship/Sensor: MV Asphalion (18083)
Observor(s): (?)
Description: Aden towards Singapore. 13th April, 1964, at 2145 G.M.T. in 10 deg 36'N, 59 deg 08'E

with wind ENE force 3 and a slight ENE swill, vessel passed through an extensive area of phosphorescence. Approximately 2 miles long and 300 feet wide. As the vessel passed into the area the whole ship and surrounding sea was lit by a vivid white light (as if a searchlight had suddenly been directed on the ship).
Reported In: Letter to Dr. Kay
Approx Location: Somalia/Socotra
Confidence In Sighting: High Confidence

1.172 West Africa 1964 A

Observation Start Date: 07/29/1964
Observation Start Hour: 20:00 UNK
Observation End Date: 07/29/1964
Observation End Hour: 24:00 UNK
Approximate Lat: 7 deg 42' N
Approximate Lon: 15 deg 54' W
Observing Ship/Sensor: MV Crystal Cube (18366)
Observor(s): Mr. H. Scally, Third Officer
Description: 29th June 1964 between 2000 and 2400 in 7 deg 42' N, 15 deg 54' W. Phosphorescence was observed during this time. There were two different types, the first consisted of rapid light specks or flases which when the Aldis lamp was flashed on them appeared to move more rapidly. The second consisted of large white patches which gave a dull milky appearance with no flashing lights, only a dull glow. The sky was overcast, sea temperature 80 deg, wind SE by S 4.
Reported In: Letter to Dr. Kay
Approx Location: West Africa
Confidence In Sighting: High Confidence

1.173 Lakshadweep, India 1964

Observation Start Date: 07/31/1964
Observation Start Hour: 15:00 GMT
Observation End Date: 07/31/1964
Observation End Hour: 15:06 GMT
Approximate Lat: 8 deg 06' N
Approximate Lon: 72 deg 45' E
Observing Ship/Sensor: MV Cardiganshire (18416)
Observor(s): Mr. I. A. Russell, Third Officer.
Description: Captain S. E. Allerton, Aden towards Singapore. Observer Mr. I. A. Russell, Third Officer. 31st July, 1964, at 1500 G.M.T. in 8 deg 06'N, 72 deg 45'E. Whilest signalling to another ship, I noticed an unusual glow in the water, said glow began to grow brighter and brighter until an unusually large stretch was lit up, brilliant in comparison to the dark night. An approximate measurement of said patch would be 1/4 mile in length and several hundred yards wide. The life of the presumed phosphorescence was about 6 minutes after which it gradually died away until no signs remained. I considered this unusual sight worthy of recording as a phenomenon not usually seen,
Reported In: Letter to Dr. Kay
Approx Location: Lakshadweep, India
Confidence In Sighting: Very Low Confidence

1.174 West Africa 1964 B

Observation Start Date: 08/01/1964
Observation Start Hour: 20:00 UNK
Observation End Date: 08/01/1964
Observation End Hour: 24:00 UNK
Approximate Lat: 0 deg 43' N
Approximate Lon: 10 deg 20' W
Observing Ship/Sensor: MV Crystal Cube (18366)
Observor(s): Mr. H. Scally, Third Officer
Description: 1st July, 1964, between 2000 and 2400 in 00 deg 43'N, 10 deg 20'W. Large patches of phosphorescence were observed again of two types. First had bright white specks which appeared at ship's side and stretched about 100 yards outward. The second were long large patches with a milky appearance stretching as far as the eye could see. The impression given was that of running into surf. When the lamp was shone on the water, it appeared as if there was a large amount of weed in the water. A sample of water was taken in a plastic bucket but no weed was present. Bright specks were observed in the bucket but on shinint light into the bucket these disappeared. Sky was cloudless with no moon.
Reported In: Letter to Dr. Kay
Approx Location: West Africa
Confidence In Sighting: High Confidence

1.175 Sri Lanka 1964 A

Observation Start Date: 08/18/1964
Observation Start Hour: 02:45 LOC
Observation End Date: 08/18/1964
Observation End Hour: (?)
Approximate Lat: 6 deg 18' N
Approximate Lon: 79 deg 18' E
Observing Ship/Sensor: SS Caltex London (18336)
Observor(s): Mr. A. A. Bolt, Second Officer
Description: Captain R. A. Robinson. Rastanura towards Hong Kong, observer Mr. A. A. Bolt, Second Officer. 18th August, 1964, in approximate position 6 deg 18' N, 79 deg 18' E. At 0245 ship's time vessel suddenly ran into a patch roughly 1000 feet by 1000 feet, of phosphorescence. None had been seen before and this patch was only seen when the ship actually ran into it, giving the impression that the passage of the ship actuated. it appeared as a sheet of milky sea with the ship in the centre.
Reported In: Letter to Dr. Kay
Approx Location: Sri Lanka
Confidence In Sighting: Low Confidence

1.176 Indian Ocean 1964

Observation Start Date: 08/18/1964
Observation Start Hour: 23:10 GMT
Observation End Date: 08/18/1964
Observation End Hour: 23:45 GMT
Approximate Lat: 7 deg 11' N
Approximate Lon: 76 deg 55' E
Observing Ship/Sensor: SS Serenia
Observor(s): B. G. Calderwood, Second Officer
Description: 18th August 1964. Between 2310 and 2345 GMT a wide band of greyish-white water,

with a clearly defined edge was seen about 150 yd from the ship, running in a 170 deg-350 deg direction. The further distant edge was not visible. No sparkle was seen in the band, but when the beam from the Aldis lamp was directed upon the surface, the area subjected to the light would glow quite vividly. The glow would gradually diminish in intensity when the lamp was switched off and disappeared entirely about 5 sec afterwards. Sea temp. 74 deg F. Position of ship: 7 deg 11'N, 76 deg 55'E. [Possibly a very weak milky sea.]
Reported In: Mar. Obs. 1965, 07, Vol XXXV, no 209
Approx Location: Indian Ocean
Confidence In Sighting: High Confidence

1.177 Central America 1964

Observation Start Date: 09/04/1964
Observation Start Hour: 01:45 GMT
Observation End Date: 09/04/1964
Observation End Hour: (?)
Approximate Lat: 11 deg 06' N
Approximate Lon: 89 deg 25' W
Observing Ship/Sensor: SS Pacific Northwest (18405)
Observor(s): Mr. C. R. Giles, Fourth Officer, Mr. J. R. Perks, navigating apprentice
Description: Captain J. L. Sims, Panama towards Los Angeles. Observers Mr. C. R. Giles, Fourth Officer and Mr. J. R. Perks, navigating apprentice. 4th September 1964, at 0142 G.M.T. in 11 deg 06'N, 89 deg 25'W, course 298 deg, speed 16 knots. A band of phosphorescence was observed about 600 feet ahead. This phenomenon was observed from the port side of the bridge and appeared to stretch some 400-450 feet to port. It was seen to stretch to starboard for an indeterminate distance. As the vessel passed through, the phosphorescence could be seen to be made up of millions of tiny fragments, which gave off quite an appeciable light. This light, when first observed, gave the appearance of a disturbed sea, white in colour, but this colour turned greenish as the vessel passed through and returned to white again on clearing astern.
Reported In: Letter to Dr. Kay
Approx Location: Central America
Confidence In Sighting: High Confidence

1.178 Somalia/Socotra 1964 C

Observation Start Date: 10/01/1964
Observation Start Hour: 20:30 GMT
Observation End Date: 10/01/1964
Observation End Hour: (?)
Approximate Lat: 19 deg 47' N
Approximate Lon: 58 deg 41' E
Observing Ship/Sensor: SS British Sailor (18973)
Observor(s): Captain F. W. Cuffley, Mr. Mcfarlane, Chief Officer, Mr. Young, Third Officer and Mrs. Mcfarlane, the Chief Officer's wife
Description: Captain F. W. Cuffley. 1st October 1964 at 2030 GMT in 19 deg 47'N, 58 deg 41'E on passage from suez towards Kharg Island. Passed through a large belt of phosphorescence about 1 1/2 miles across and stretching as far as the eye could see in a NW-SE direction. The sea appeared milky white and the general impression was of a snow covered field on a moonlight night. The "belt" was first noticed some 2 miles off when the look-out reported several ships ahead (there turned out to be small breaking waves), the sea and horizon blended and it appeared as if the bows were lifting as the

ship approached the clearly defined extermity of the belt. On entering the belt everything took on a greenish white appearance and the bridge was lit by a glow from the sea, small breaking waves appeared as white flashes of luminosity. The further edge was again extremely well defined and the phenomenon was visible up to 2 1/2 miles astern. Winds southerly force 3, sea slight with occasional breaking crests, air temperature 76.5 deg, sea temperature 78.4 deg. Ship's course 035 deg speed 16 knots. (Observed by the Master, Mr. Mcfarlane, Chief Officer, Mr. Young Third Officer and Mrs. Mcfarlane, the Chief Officer's wife).
Reported In: Letter to Dr. Kay
Approx Location: Somalia/Socotra
Confidence In Sighting: High Confidence

1.179 Sri Lanka 1964 B

Observation Start Date: 10/20/1964
Observation Start Hour: 23:50 GMT
Observation End Date: 10/20/1964
Observation End Hour: (?)
Approximate Lat: 6 deg 29' N
Approximate Lon: 78 deg 15' E
Observing Ship/Sensor: MV City of Khartoum (18420)
Observor(s): Unnamed Fourth Officer
Description: Captain P. S. Morrison, Penang towards Aden, observer Fourth Officer. 20th October 1964, at 2350 G.M.T. in 6 deg 29'N, 78 deg 15'E. Marked phosphorescence to landward. Patches of milky-white observed but taking no distinct size or shape. On disturbing these, the glow from the water was near to daylight. No change in sea temperature. Sky completely overcast, wind force 3 from SW.
Reported In: Letter to Dr. Kay
Approx Location: Sri Lanka
Confidence In Sighting: High Confidence

1.180 South Africa 1964

Observation Start Date: 11/03/1964
Observation Start Hour: 20:30 GMT
Observation End Date: 11/03/1964
Observation End Hour: (?)
Approximate Lat: 34 deg 45' S
Approximate Lon: 21 deg 59' E
Observing Ship/Sensor: MV Adventurer (18491)
Observor(s): C. E. E. Jones, Third Officer and unnamed look out
Description: Captain L. J. Sherman, Durban towards Cape Town. Observers C. E. E. Jones, Third Officer and the look-out man. 3rd November, 1964 in 34 deg 45'S, 21 deg 59'E. During the evening watch, extensive areas of phosphorescence had been observed. At 2030 G.M.T. the vessel passed through numerous patches of "white water", so many in fact that it appeared as if the vessel was passing through a field of rotten ice. The Aldis beam was directed on to one patch as the vessel cut into it and large numbers of small fish were observed swimming away from the vessel. The smell of fish had been exceptionally strong during the preceding two hours.
Reported In: Letter to Dr. Kay
Approx Location: South Africa
Confidence In Sighting: High Confidence

1.181 India 1964

Observation Start Date: 12/06/1964
Observation Start Hour: 19:00 GMT
Observation End Date: 12/06/1964
Observation End Hour: 21:15 GMT
Approximate Lat: 20 deg 00' N
Approximate Lon: 71 deg 18' E
Observing Ship/Sensor: SS City of New York (18988)
Observor(s): Mr. D. K. Keith, Second Officer
Description: Captain R. H. Broadbent, Karachi towards Bombay. 6th December 1964 from 1900 GMT, sea waves were lit up by phosphorescence of a moderate brilliance, intensified in the ship generated waves. At 2050 in 20 deg N 71 deg 18' E, an area of phosphorescence of moderate brilliance was seen extending 000 deg - 180 deg approximately 1 1/2 miles on either side of the ship, sighted at a distance of about 1 mile ahead and lost to view about 1 mile astern. The western edge was well defined, but the eastern side gradually returned to the surrounding conditions. The width of the area being roughly estimated at half mile and ocntaining patches of increased brilliance, but ship generated waves had no effect on the brilliance. At 2115 all traces of luminescence in the sea disappeared. Odd weak patches returned from 2200 GMT onwards. Observer Mr. D. K. Keith, Second Officer.
Reported In: Letter to Dr. Kay
Approx Location: India
Confidence In Sighting: High Confidence

1.182 Somalia/Socotra 1964 D

Observation Start Date: 12/30/1964
Observation Start Hour: 17:00 GMT
Observation End Date: 12/30/1964
Observation End Hour: 17:25 GMT
Approximate Lat: 20 deg 04' N
Approximate Lon: 64 deg 33' E
Observing Ship/Sensor: SS Humilaria (19545)
Observor(s): Mr. J. L. Taylor, Third Officer, Mr. J McAlister, Radio Officer, and Mr. C. Joyce, Able Seaman.
Description: Captain G. Turnbull, Fao towards Tobango (Philippine Islands). 30th December 1964 (confirmed 1964) at 1700 GMT in 20 deg 04' N, 64 deg 33'E, vessel entered an extensive area of phosphoresecence. The width of the area affected by the phosphorescence was estimated to be from approximately 3 miltes to the north-east of the vessel to a similar distance to the south-west of the vessel. The length of the affected area was 7 miles measured by log. The area affected by the phosphorescence was quite distinct, appearing as a lighter, rather milky colour, against the background of a much darker sea. No change in sea temperature (75.5 deg) was observed either on entering the phosphorescence nor on leaving same. On leaving the area of phosphorescence at 1725 GMT, a very distinct demarcation line was observed between the region of phosphorescence and the unaffected sea area. Observed by Mr. J. L. Taylor, Third Officer, Mr. J. McAlister, Radio Officer and Mr. C. Joyce, Able Seaman.
Reported In: Letter to Dr. Kay
Approx Location: Somalia/Socotra
Confidence In Sighting: High Confidence

1.183 Somalia/Socotra 1965 A

Observation Start Date: 01/02/1965
Observation Start Hour: 00:30 UNK
Observation End Date: 01/02/1965
Observation End Hour: (?)
Approximate Lat: 12 deg 08' N
Approximate Lon: 50 deg 47' E
Observing Ship/Sensor: SS Helenus (18621)
Observor(s): Captain W. J. Collett, Mr. Barns, Second Officer, Mr. Gerard extra Second Officer and Messrs. Wallace and Goodban, Officer Cadets
Description: 2nd January 1965 at 0030 in 12 deg 08'N, 50 deg 47'E, a narrow white band was observed on the western horizon approximately 3 deg altitude. Immediately above this band was another, of greater vertical extend, black, resembling low stratiform cloud. At 0045 the ship entered an area of "white" water which appeared to be the type of bioluminescence known as "milky sea". The dividing line between this and unaffected sea water was clearly marked and extended roughly N-S as far as the eye could see, the land being 11 miles to the south. The diffused white light was bright enough to show up the silhouette of an unlit passing dhow. The phenomenon faded as dawn approached so that the westerly limit was not observed. On shining the signalling lamp on the sea during the phenomenon, minute yellow particles, similar to the red particles seen in other types of bioluminescence, were observed. No phosphorescence was observed in the immediate vicinity of the eastern limit. The black cloud effect dissipated on closing with the "milky sea". A sample of the water was preserved.
Reported In: Letter to Dr. Kay
Approx Location: Somalia/Socotra
Confidence In Sighting: High Confidence

1.184 Somalia/Socotra 1965 B

Observation Start Date: 01/03/1965
Observation Start Hour: 20:00 GMT
Observation End Date: 01/03/1965
Observation End Hour: 22:30 GMT
Approximate Lat: 11 deg 48' N
Approximate Lon: 51 deg 30' E
Observing Ship/Sensor: MV Port Victor (18739)
Observor(s): (?)
Description: Melbourne towards Aden. 3rd January 1965 while rounding Cape Guardafui at about 2000 GMT the whole sea surface was observed to take on a glowing, milky appearance. This reached intensity about 2030 GMT and finally faded quite abruptly at about 2230 GMT. Effect from horizon to horizon. Smooth to rippled sea throughout and cloudless fine and clear with no moon showing. No marked change in water temperature or sediment observed in water.
Reported In: Letter to Dr. Kay
Approx Location: Somalia/Socotra
Confidence In Sighting: High Confidence

1.185 Somalia/Socotra 1965 C

Observation Start Date: 01/04/1965
Observation Start Hour: 01:15 GMT
Observation End Date: 01/04/1965
Observation End Hour: 02:00 GMT

Approximate Lat: 12 deg 00' N
Approximate Lon: 50 deg 42' E
Observing Ship/Sensor: MV Chakla (19120)
Observor(s): Mr. D. M. Ledger, Second Officer, and Mr. S. D. Minogue, Third Officer
Description: Captain P. M. Pitcairn, Mombasa towards Aden. 4th January 1965 at 0115 GMT in 12 deg 00'N, 50 deg 42'E (5 miles north of Ras Alulu). Sea entirely phosphorescent giving a translucent effect and lighting up the ship as if by moonlight. On close observation the water was full of various sized specks of phosphorescence (largest about the size of sixpence). Wind easterly force 2, sea temperature 74.8 deg. This effect lasted from 0115 until 0200 GMT and its limits were quite clearly defined. Observers Mr. D. M. Ledger, Second Officer and Mr. S. D. Minogue, Third Officer.
Reported In: Letter to Dr. Kay
Approx Location: Somalia/Socotra
Confidence In Sighting: High Confidence

1.186 Somalia/Socotra 1965 D

Observation Start Date: 01/08/1965
Observation Start Hour: 19:20 GMT
Observation End Date: 01/08/1965
Observation End Hour: 20:56 GMT
Approximate Lat: 15 deg 57' N
Approximate Lon: 57 deg 41' E
Observing Ship/Sensor: SS City of Pretoria (18765).
Observor(s): Mr. I. G. Tew, Third Officer, Mr. D. McSwann, Quarter Master, Mr. P. G. Pike, Second Officer
Description: Captain C. P. Parks-Bradbury. 8th January 1965 at 1920 GMT in 15 deg 57'N, 57 deg 41'E, on passage from Bombay towards Aden. The horizon, which previously had been very firm became blurred and then disappeared altogether. As we approached it appeared as though we were coming into a bank of fog. On entering the "fog" it turned out that the water was "lit up" as though a light had been turned on under the sea. It stretched over the ocean as far as the eye could see. As we proceeded, the sea became brighter giving the effect of ice. I shone the Aldis light on the sea but it appeared quite normal and green in colour. A sample of the water looked clear and normal. It also tasted quite normal. At 1950 a distinct line of demarcation, running north and south was seen. On our side the sea was bright and on the other it was black. At 1955 we crossed this line back into normal water. On looking astern it looked as there there was white mist along the demarcation line. The night was exceptionally bright, no moon and cloudless. (Observed by Mr. I. G. Tew, Third Officer and Mr. D. McSwann, Quarter Master). At 2040 GMT on the same night in 15 deg 46'N, 57 deg 26'E the vessel again ran into an area of luminescent water, stretching from horizon to horizon. The appearance of the water, milky-white and opague, was identical to that of smaller patches of luminescence frequently seen in these waters. Neither the shining of the Aldis lamp nor the switching on of the radar produced any signs of activity in the water. The western edge of the area was reached at 2056 GMT and again showed a clear line of demarcation running north and south. Another vessel's steaming lights (radar distance off, 9 miles) were clearly visible throughout the time the vessel was in the area. The other thing of note about the occurrence was a distinct "musty" smell while the vessel was passing through the luminescent area. At 2059 GMT and for 2 minutes, marked phosphorescence was seen in the bow wave (observed by Mr. P. G. Pike, Second Officer).
Reported In: Letter to Dr. Kay
Approx Location: Somalia/Socotra
Confidence In Sighting: High Confidence

1.187 India 1965

Observation Start Date: 01/28/1965
Observation Start Hour: 17:00 GMT
Observation End Date: 01/28/1965
Observation End Hour: (?)
Approximate Lat: 20 deg 39' N
Approximate Lon: 70 deg 33' E
Observing Ship/Sensor: MV Santhia
Observor(s): P.N. Crisp, Third Officer
Description: Large patches of white coloured water were observed ahead and on both sides of the ship. They were visible at a distance of one and two miles, depending on their respective areas. The general trend of passage was roughly 045 deg T/225 deg T but in size and shape they were very irregular. The bow wave of the ship appeared phosphorescenct and no apparent change was observed when passing through these patches. Air temp.: 25.0 deg C, W.B.: 22.5 deg C, Sea temp.: 24.7 deg C, Pressure: 1016.0 mb, Wind: light, Calm, sea.
Reported In: Indian Journal of Meteorology and Geophysics 1965, vol. 16 (1); Tim Wyatt Unpublished Notes/Paper
Approx Location: India
Confidence In Sighting: High Confidence

1.188 Somalia/Socotra 1965 E

Observation Start Date: 01/31/1965
Observation Start Hour: 15:00 GMT
Observation End Date: 01/31/1965
Observation End Hour: 16:40 GMT
Approximate Lat: 19 deg 30' N
Approximate Lon: 58 deg 26' E
Observing Ship/Sensor: MV Trebartha (19143)
Observor(s): (?)
Description: 31st January 1965 at 1500 GMT in 19 deg 30'N, 58 deg 26'E. Vessel entered "Milky sea" giving the effect of entering a fog. The horizon disappeared and the sea and sky appeared to be fused into one, though stars with low altitudes were still visible. Particles of phosphorescence were abundant in vessel's bow wave but not outside of it. These conditions continued until 1520 GMT when the effect of the Milky sea slowly reduced to normal conditions at 1640. A lamp was flashed across the sea but no effect was observed.
Reported In: Letter to Dr. Kay
Approx Location: Somalia/Socotra
Confidence In Sighting: High Confidence

1.189 Banda Sea 1965

Observation Start Date: 07/20/1965
Observation Start Hour: 11:00 GMT
Observation End Date: 07/20/1965
Observation End Hour: 14:00 GMT
Approximate Lat: 4 deg 22' S
Approximate Lon: 128 deg 12' E
Observing Ship/Sensor: MV Glenmoor (19331)
Observor(s): Captain Rowe, Mr. D. Robinson, Chief Officer, Mr. G. W. Richardson, Third Officer

Description: Hong Kong towards Queensland. 20th July 1965 at 1100 GMT in 4 deg 22'S, 128 deg 12'E. Whilst the sky was dark, there being no moon and about 4/8th cloud, the whole surface of the sea around the ship suddenly began to glow, gradually getting brighter until at about 1145 GMT the whole of the surface of the sea, as far as the eye could see, was glowing brightly as if by some inherent green light. This did not appear to be the usual phosphorescence which seems to scintillate, but glowed steadily as though green neon lights were alight just under the surface of the sea. The sides of the ship seemed to light up and a bucket full of water was obtained from over side. Whilst the captain and myself were examining water in bucket for signs of marine life, a crew member who had been looking down on us from the deck above, stated that the water in the bucket was glowing. This was not apparent to the Captain or myself, who were of course much closer to the water in the bucket. The water in the bucket appeared to be clear. This luminescence laster for three hours until 1400 GMT being brightest at 1145, then very gradually declined in brightness until it disappeared. During this period, the following observations were made: wind SE 17 mph, air temperature 77 deg, wet bulb 72 deg, sea temperature 77 deg. Course of ship 120 deg, barometer 29.80 inches. Visibility appeared to have been a little better than five miles with a hazy atmosphere. The Master, Captain Rowe and Mr. D. Robinson the Chief Officer both stated that they had never seen such phosphorescence before. Observed by Mr. G. W. Richardson, Third Officer.
Reported In: Letter to Dr. Kay
Approx Location: Banda Sea
Confidence In Sighting: High Confidence

1.190 Madagascar 1965

Observation Start Date: 07/25/1965
Observation Start Hour: 20:15 LOC
Observation End Date: 07/26/1965
Observation End Hour: 05:30 LOC
Approximate Lat: 9 deg 30' S
Approximate Lon: 52 deg 48' E
Observing Ship/Sensor: MS Van oler Hagen
Observor(s): F.M.P. Bouter, 3e stm; E.J.A. Urban, 2e stm; F.E. de Nieuwe, 1e stm
Description: Varende in de Indische Oceaan +/- 300' NW. van Madagascar op weg van Melbourne naar Mombasa werd het volgende waargenomen, gedurende de EW. 25/7/65 en de HW. en DW. 26/7/65. Om +/- 20.15 EW. werd de zee melkwit, wat met de overeenkomstige tint van de bewolking de indruk gaf, dat een dichte mist werd ingevaren. De bewolking bestond op dat moment uit Stratus en Stratocumulus 8. Wolkenbasis geschat op +/- 200 meter. In het begin gaf een ander een spookachtige, bijna angstwekkende indruk, temeer daar het doodstil was; ondanks windkracht 3 á 4 aanvankelijk, was de zee bijna spiegelglad, behoudens een lage matig lange zuidelijke deining. Het verschijnsel wekte ook de indruk, dat door een sneeuwlandschap werd gevaren. Een andere vergelijking: een vliegtuig in een witte wolk. Vrij snel were vastgesteld, dat men hier niet te maken had met mist. Het zoeklicht werd opgetuigd en bij beschijning van het wateroppervlak, lichtten talrijke deeltjes (diertjes?) rood op. In mindere mate kwamen ook groene en witte deeltjes voor. Gedurende het verschijnsel was het normale lichten van de zee minder geworden. De deeltsjes schenen zich sprongsweijs voort te bewegen. De modelijkheid is echter niet uitgesloten, dat deze "sprongetjes" door de boeggolf werden veroorzaakt. In ieder geval werd geconsstateerd dat wind en zee geen invloed haddden op de voortbeweging van de deeltjes. Tegen 22.30 begonnen zee en wolken weer langzaam hun normale aanzien te herkrijgen. Om 23.00 was alles weer normaal. De rode deeltjes waren er nog steeds, doch minder talrijk dan eerst. Om 23.30 begon de totaal bewolkte hemel eruit te zien alsof de ochtendschemering langzaam intrad recht vooruit. De zee had echter nog steeds de normale donkere kleur met alleen de groen fluorescerende boeggolf. Om 23.45 werd de zee wederom melkwit nu echter binnen een tijdsbestek van één minuut, terwijl de eerste maal de varandering geleidelijk was ingetreden. De rood lichtende deeltjes kwamen weer veelvuldig voor. Tegen

00.50 begon het verschijnsel weer af te nemen, terwijl tevens de bewolking even brak. Te 01.00 wederom de volle intensiteit, zelfs not helderkder dan voorheen. Van 01.20 tot 01.40 werd alles geleidelijk minder om bijna geheel to verdwijnen. Om 2.30 wederom bovenvermelde verschijnselen. Om 04.15 begon het te regenen en om 04.20 begon de zee weer het normale anzien te krijgen. Om 04.35 was alles weer normaal. Om 04.45 was ook de regenbui afgelopen. Echter om 04.40 werd waargenomen, dat de kim aan bakboord +/- 2 strenaar achteren. Om 04.45 is de plek dwarsop. Om 05.30 is ook dit verschijnsel verdwenen. Van 05.00 tot 05.30 regenbui. Waarnemingen: Tyd: 01.00 Natte Bol: 22.5 Droge Bol: 25.0 Tz: 24.3 Wind 190 12 kts. Tyd: 03.00 Natte Bol: 21.5 Droge Bol: 25.0 Tz 24.2 Wind: 190 10 kts. Sg zeewater tijdens en na verschijnselen 1,012.
Reported In: Tim Wyatt, Unpublished Notes/Paper
Approx Location: Madagascar
Confidence In Sighting: High Confidence

1.191 Java 1965

Observation Start Date: 08/03/1965
Observation Start Hour: 19:00 GMT
Observation End Date: 08/03/1965
Observation End Hour: 21:00 GMT
Approximate Lat: 10 deg 12' S
Approximate Lon: 120 deg 00' E
Observing Ship/Sensor: MV Araluen (19361)
Observor(s): (?)
Description: Townsville towards Djibouti. 3rd August 1965 between 1900 and 2100 GMT whilst the vessel was some 50 miles off the southwest tip of the Indonesian Island of Sumba (position at 1800 GMT was 10 deg 12'S, 120 deg 00'E). The phenomenon known as 'milky sea' was observed. The horizon was quite clear throughout the period but although there was a force 4 breeze from the east, no disturbance of the sea could be seen other than that immediately surrounding the ship. The air temperature was 75 deg and the sea temperature 79 deg and the sky was cloudless. Observed by Mr. M. J. Butler, Chief Officer
Reported In: Letter to Dr. Kay
Approx Location: Java
Confidence In Sighting: High Confidence

1.192 Somalia/Socotra 1965 F

Observation Start Date: 08/04/1965
Observation Start Hour: 23:00 GMT
Observation End Date: 08/05/1965
Observation End Hour: 00:00 GMT
Approximate Lat: 12 deg 30' N
Approximate Lon: 56 deg 30' E
Observing Ship/Sensor: MV Glenfalloch (19243)
Observor(s): (?)
Description: Panang towards Aden. 4th-5th August 1965 in 12 deg 30'N, 56 deg 30'E. At 0200 ship's time with a fresh SW monsoon blowing and the night being dark, the horizon suddenly paled and soon the ship was passing through luminous sea. It was as if the water was in a palely floodlit swimming pool; so clear it was, and very much lighter than the sky. As the waves broke, they shone clear white, but not brilliantly as in a phosphorescent sea. This phenomenon lasted for about an hour, finishing as quickly as it came.

Reported In: Letter to Dr. Kay
Approx Location: Somalia/Socotra
Confidence In Sighting: High Confidence

1.193 Somalia/Socotra 1965 G

Observation Start Date: 08/07/1965
Observation Start Hour: 22:20 UNK
Observation End Date: 08/07/1965
Observation End Hour: 23:10 UNK
Approximate Lat: 11 deg 50' N
Approximate Lon: 59 deg 00' E
Observing Ship/Sensor: MV Delphic (19570)
Observor(s): Captain G. A. Borthwick, Mr. M. Sargeant, Second Officer and Mr. E. Glover, Cadet
Description: Djibouti towards Colombo. 7th August 1965 in 11 deg 50'N, 59 deg 00'E. Marked phosphorescence of the white water type observed from 2220-2230 and from 2250-2310. In each case the effect was produced and terminated gradually although towards the end of each period the line of darked water would be seen advancing from the south-eastward. At the height of luminescence in both cases the effect extended to the lmit of visibility and the light contrast between sea and sky appeared to be reversed ie the sea appeared to be much lighter in tone than the sky and the overall effect of the sea and sky was that of a black and while photographic negative. The horizon was quite clearly defined against the sky. The moon had set about one hour previously and apart from starlight the night was black. During the phenomenon, the sea appeared in a greenish-white colour and somewhat turbid. The bow waves and breaking waves in the vicinity were still clearly visible although at a much reduced contrast with the sea to that produced under normal conditions. The light produced was not of sufficient intensity to cause relfection aboard the vessel. Sea temperature readings indicated a rise in temperature of 2 deg during the periods of the phenomenon. The use of radar did not produce any further phenomenon and the Aldis light had no effect either. Observed by Captain G. A. Borthwick, Mr. M. Sargeant, Second Officer and Mr. E Glover, Cadet.
Reported In: Letter to Dr. Kay
Approx Location: Somalia/Socotra
Confidence In Sighting: High Confidence

1.194 Tanzanian coast 1965

Observation Start Date: 08/19/1965
Observation Start Hour: 19:00 GMT
Observation End Date: 08/19/1965
Observation End Hour: (?)
Approximate Lat: 8 deg 57' S
Approximate Lon: 40 deg 22' E
Observing Ship/Sensor: SS Kenya (19419)
Observor(s): (?)
Description: Captain I. K. Bowerman, Dar Es Salam towards Beira, observer Mr. D. M. Grundry, Third Officer. 19th August 1965 at 1900 GMT in 8 deg 57' S, 40 deg 22'E. Passed through a vast area of coloured water. At 1915 the sea was a light grey colour and appeared to extend all round the ship to the limits of the visible horizon. The loom of the moon was faintly visible to port during this time and from 1700 GMT. A sample of water was taken and in a glass appeared to have no colour at all but when the Aldis light was shone on the sea, the latter appeared a gray-green colour. The whole effect with the total darkness of the sky was as if the ship were passing through an ice field on a dark night.

No sparkle of phosphorescence was observed.
Reported In: Letter to Dr. Kay
Approx Location: Tanzanian coast
Confidence In Sighting: High Confidence

1.195 Somalia/Socotra 1965 H

Observation Start Date: 08/21/1965
Observation Start Hour: 16:45 GMT
Observation End Date: 08/21/1965
Observation End Hour: 16:48 GMT
Approximate Lat: 10 deg 02' N
Approximate Lon: 60 deg 36' E
Observing Ship/Sensor: MV Afric (19565)
Observor(s): Mr. W. M. Douglas, Third Officer and Mr. M. Doyle, Radio Officer
Description: Captain P. K. Murchison, Aden towards Colombo. 21st August 1965 at 1645 GMT in 10 deg 02'N, 60 deg 36' E. Initially a thin green line was observed near the horizon, similar in structure if not in colour to a moonlit horizon on a cloudy night, having a definite limit and apparently several miles away. Above was observed what appeared to be a very large black cumulonimbus cloud mass as one would expect with an approaching storm. Within one minute of the initial observation, the whole sea was illuminated with a phosphorescent lighting allowing wave structures to be observed almost as far as is possible in daylight. No individual brighter portions were present as in a wake or bow wave, the whole sea emitted light as might a luminous paint. The bow wave itself was lit with a bluish tinge and the sky darkened and only the brighter stars were visible. Within 3 minutes, the phenomenon had passed and the phosphorescent perimeter line passed astern, against the wind, at a far greater speen that that of the ship through the water and rapidly disappeared. Observation then showed the sky to be 2/8th clouded, with cumulus cloud only. No storm clouds were present. The moon had not risen. Sea temperature 78 deg. Observed by Mr. W.M. Douglas, Third Officer and Mr. M. Doyle, Radio Officer.
Reported In: Letter to Dr. Kay
Approx Location: Somalia/Socotra
Confidence In Sighting: High Confidence

1.196 North of Lisbon in Portugal 1965

Observation Start Date: 08/21/1965
Observation Start Hour: 22:30 GMT
Observation End Date: 08/21/1965
Observation End Hour: (?)
Approximate Lat: 39 deg 45' N
Approximate Lon: 9 deg 24' W
Observing Ship/Sensor: MV Arlanza (19325)
Observor(s): (?)
Description: Captain T. W. F. Bolland, Lisbon towards Vigo. Observor Mr. J. C. Jardine, Senior Third Officer. 21st August 1965 at 2230 GMT in 39 deg 45'N, 9 deg 24'W. Entered a large area of bright phosphorescence. On approaching the area it appeared so bright as to give the appearance of a fog bank, the sky being overcast and the moon not yet risen. A sample of sea water was taken but no living organisms were evident to the naked eye. At one stage fish were observed to be rising but by the time an Adlis lamp was shone they had stopped and size could not be ascertained. The water did not react to the shining of the Aldis Lamp
Reported In: Letter to Dr. Kay

Approx Location: North of Lisbon in Portugal
Confidence In Sighting: Very Low Confidence

1.197 Somalia/Socotra 1965 I

Observation Start Date: 08/22/1965
Observation Start Hour: 15:30 GMT
Observation End Date: 08/22/1965
Observation End Hour: (?)
Approximate Lat: 12 deg 06' N
Approximate Lon: 57 deg 36' E
Observing Ship/Sensor: MV Cardiganshire (19324)
Observor(s): (?)
Description: Trincomalee towards Aden. 22nd August 1965 at 1530 GMT in 12 deg 06'N, 57 deg 36'E. Marine bioluminescence was observed. Wind SW Force 6, rough sea, heavy swell, cloudless sky. Sea temperature 78 deg. The bioluminescence appeared to be in the form of an even white luminescence a few feet above the sea surface. These conditions prevailed for about one hour before gradually fading away; during this time the luminescence stretched to the horizon in all directions. The radar was switched on but had no apparent effect upon the phenomenon. The Aldis lamp was played on the sea surface but this also had no visible effect. At 1830 GMT the same day in 12 deg 17'N, 56 deg, 55'E, further marine bioluminescence was encountered similar to the luminescence previously observed except that instead of fading gradually as the first area of bioluminescence did, the second area ended abruptly at a clearly defined line.
Reported In: Letter to Dr. Kay
Approx Location: Somalia/Socotra
Confidence In Sighting: High Confidence

1.198 Somalia/Socotra 1965 J

Observation Start Date: 08/27/1965
Observation Start Hour: 16:15 GMT
Observation End Date: 08/27/1965
Observation End Hour: 17:30 GMT
Approximate Lat: 14 deg 06' N
Approximate Lon: 60 deg 30' E
Observing Ship/Sensor: SS City of New York (19853)
Observor(s): (?)
Description: 27th August 1965 at 1615 GMT in 14 deg 06'N, 60 deg 30'E. Remarkable luminosity of the sea was observed. The whole sea glowed with a pale green light which was sufficiently strong to make detection of wave crests impossible (wind force 5). None of the usual signs of phosphorescence such as sparkling particles in the bow wave were visible. The intensity of the glow varied somehwat over the period and disappeared at 17:30 GMT.
Reported In: Letter to Dr. Kay
Approx Location: Somalia/Socotra
Confidence In Sighting: High Confidence

1.199 Somalia/Socotra 1965 K

Observation Start Date: 08/27/1965
Observation Start Hour: 20:25 GMT

Observation End Date: 08/27/1965
Observation End Hour: 21:15 GMT
Approximate Lat: 16 deg 02' N
Approximate Lon: 60 deg 26' E
Observing Ship/Sensor: SS City of Pretoria (19462)
Observor(s): Mr. W. Donn, Junior Second Officer, and Mr. C. L. Knowles, Third Officer
Description: Captain C. B. Parks Bradbury, Aden towards Bombay. 27th August 1965 in 16 deg 02'N, 60 deg 26'E, speed 14.8 knots. Since sunset a marked, though pale, phosphorescent glow had been visible in the bow wave of the vessel and the numerous "white horses" on the sea surface. At 2025 GMT the vessel entered an area of water, the whole surface of which was lit by phosphorescence. It gave the sea a "milky" appearance and the diffused light was uniform in intensity to the horizon (it appeared, although there was no means of checking it, that the visible horizon was much reduced). When the ship's Aldis lamp (36 watts) was switched on and directed at the sea surface, at varying distances, no visual change in illuminosity could be seen. A sample of the sea water taken in the insulated bucket showed no signs of organic matter; sharp agitation of the bucket produced no light whatsoever. The vessel cleared the area of milky water at 2115 GMT. Observed by Mr. W. Donn, Junior Second Officer and Mr. C. L. Knowles, Third Officer.
Reported In: Letter to Dr. Kay
Approx Location: Somalia/Socotra
Confidence In Sighting: High Confidence

1.200 Somalia/Socotra 1965 L

Observation Start Date: 08/29/1965
Observation Start Hour: 18:45 GMT
Observation End Date: 08/29/1965
Observation End Hour: (?)
Approximate Lat: 11 deg 45' N
Approximate Lon: 58 deg 40' E
Observing Ship/Sensor: SS Mangla (20187)
Observor(s): (?)
Description: Aden to Calcutta. 29th August 1965 at 1845 GMT in 11 deg 45'N, 58 deg 40'W. Large patches of phosphoresecence observed on water during the evening. At one stage all the visible sea to the horizon around the ship was glowing creating a smokey effect and giving the impression of poor visibility. Moderate to rough sea, moderate swell. Wind SSW force 5.
Reported In: Letter to Dr. Kay
Approx Location: Somalia/Socotra
Confidence In Sighting: High Confidence

1.201 Somalia/Socotra 1965 M

Observation Start Date: 08/29/1965
Observation Start Hour: 21:00 GMT
Observation End Date: 08/29/1965
Observation End Hour: 21:30 GMT
Approximate Lat: 11 deg 10' N
Approximate Lon: 61 deg 02' E
Observing Ship/Sensor: MV Benarmin (19657)
Observor(s): (?)
Description: 29th August 1965 in 11 deg 10'N, 61 deg 02'E. For half an hour between 2100 and 2130

GMT the whole sea from ship to horizon was glowing with a brownish-green luminescence. There was no moon at the time yet the line of the horizon was clearly seen. The luminescence was so bright that masts and superstructure were discernible from the glow. Although there was a 16 knot wind blowing, the white horses could not be distinguished in the uniform effect. This phenomenon seemed to be deep in the water and was unlike normal phosphorescence. After the luminescence cleared, normal white horse phosphorescence returned.
Reported In: Letter to Dr. Kay
Approx Location: Somalia/Socotra
Confidence In Sighting: High Confidence

1.202 Somalia/Socotra 1965 N

Observation Start Date: 09/03/1965
Observation Start Hour: 19:30 GMT
Observation End Date: 09/03/1965
Observation End Hour: 22:00 GMT
Approximate Lat: 9 deg 30' N
Approximate Lon: 54 deg 25' E
Observing Ship/Sensor: SS Persic (19749)
Observor(s): (?)
Description: Djibouti towards Fremantle. 3rd September 1965 between 1930 and 2200 GMT in 9 deg 30'N, 54 deg 25' E. Sea brilliantly illuminated by luminosity, horizon clearly defined, with glow extending to about 5 degrees above horizon. There was no phosphorescent effect, the sea appearing lifeless despite moderate sea running at the time. However, sea samples taken at hourly intervals were brilliantly phosphorescent when poured on to the deck, the bright particles remaining until the water reached the scupper. The whole effect did not grow and then diminish, but began and ended abruptly.
Reported In: Letter to Dr. Kay
Approx Location: Somalia/Socotra
Confidence In Sighting: High Confidence

1.203 600 Miles SW of Galapagos Islands 1966

Observation Start Date: 07/16/1966
Observation Start Hour: 03:50 UNK
Observation End Date: 07/16/1966
Observation End Hour: 05:15 UNK
Approximate Lat: 6 deg 52' S
Approximate Lon: 98 deg 04' W
Observing Ship/Sensor: MV Port Wyndham (20313)
Observor(s): Mr. C. Allport, Junior Third Officer
Description: Lyttelton to Panama. 16th July 1966 in 6 deg 52'S, 98 deg 04'W, whilst steering a course of 59 deg at 13.5 knots. Two distinct patches of bioluminescence of the type usually called "white water" were observed. The first patch was encountered between 0350 and 0515 by Mr. C. Allport, Junior Third Officer, who reports the following: The vessel passed into a very extensive area of milky green water and the demarcation line between the normal coloured water and this milky water was very distinct, being visible on both sides of the ship. There was what appeared to be a phosphorescent mist above the surface of the sea and rapid flashed of bioluminescence were observed at a considerable distance from the ship. The Aldis lamp was flashed on the surface of the sea but had no apparent effect on the bioluminescence. The second patch was encountered from 0730 to 0830 by Mr. D. Parsons, Third Officer, and was as described above although the line of demarcation was not so distinct when the vessel passed out of the

bioluminescence as when she entered it. A difference of opinion exists over the phosphorescent mist reported during the first observation and in the second observation may well have been the light being given off by the water made the sky and sea fuse together leaving virtually no horizon and thus giving the impression of reduced visibility. There was no appreciable difference in condition from those before the bioluminescence was encountered during either period and they were as follows: Wind ESE force 4, dry bulb 73 deg, wet bulb 70 deg, dew point 68 deg, sea temperature 73 deg, overcast and fine. A sample of sea water was collected during the first observation and an attempt to preserve this had been made by boiling it and adding methylated spirit, since no formalin is available.
Reported In: Letter to Dr. Kay
Approx Location: 600 Miles SW of Galapagos Islands
Confidence In Sighting: High Confidence

1.204 Christmas Island 1966 A

Observation Start Date: 08/04/1966
Observation Start Hour: 12:15 UNK
Observation End Date: 08/04/1966
Observation End Hour: 14:30 UNK
Approximate Lat: 12 deg 09' S
Approximate Lon: 106 deg 15' E
Observing Ship/Sensor: SS Avedraehl
Observor(s): J. Visser, 3e Stm.; J. Heuvink 4e Stm.
Description: Varende in de Indische Oceaan, op weg van Sydney naar Sumatra, werd het volgende verschijnsel waargenomen. Te 12.15 werd de zee in het Noordelijk en in het Ooseltijk kwadrant grijsachtig tot wit. De eerste indruk was; Mist. Te meer daar de bewolking zich hoofdzakelijk aan de horizon bevond. Hierna lostte het verschijnsel zich op, het zicht werd weer normaal, dit was te 12.40. Te 12.55 werd hetzelfde verschijnsel waargenomen in het Westelijk kwadrant. In de boeggolf werden paars fluorescerende punten waargenomen. Afgezien van de witte kleur was er geen bijzondere verkleuring van het water te bemerken. Vanaf 14.30 was het verschijnsel niet meer waar te nemen vanwege de opkomst van de maan. Het is niet uitgesloten dat het nog enige tijd aanwezig geweest is. T droge bol: 24.8. T natte bol: 22.0. dauwpunt: 21. Wind: Richting: 140; snelheid: 16. T water: 25.0. Barometer: 1014.0.
Reported In: Tim Wyatt, Unpublished Notes/Paper
Approx Location: Christmas Island
Confidence In Sighting: High Confidence

1.205 Somalia/Socotra 1966 A

Observation Start Date: 08/06/1966
Observation Start Hour: 15:40 GMT
Observation End Date: 08/06/1966
Observation End Hour: 17:10 GMT
Approximate Lat: 12 deg 40' N
Approximate Lon: 55 deg 23' E
Observing Ship/Sensor: MV Glennfalloch (20337)
Observor(s): (?)
Description: 6th August 1966 between 1540 and 1710 GMT in 12 deg 40'N, 55 deg 23'E. Wind 220 deg force 7-8, sea rough, heavy swell, air temperature 79 deg, sea temperature 76 deg, sunset at 1442 GMT. A mist showed as a luminous glow, first in patches and then covering the whole sea. It reached a height of approximately 3 feet above the sea surface. The mist and sea surface were several shades lighter in contrast to the sky, the sea being pale green in colour and the mist an even lighter green.

No effect was observed when the Aldis was shone into the mist or on the sea surface. No temperature changes occurred before, during or after the phenomenon. Visibility was not affected for a ship could be seen through the mist at nine miles with the naked eye.
Reported In: Letter to Dr. Kay
Approx Location: Somalia/Socotra
Confidence In Sighting: High Confidence

1.206 SSW of Christmas Island 1966

Observation Start Date: 08/08/1966
Observation Start Hour: 11:00 GMT
Observation End Date: 08/08/1966
Observation End Hour: 15:55 GMT
Approximate Lat: 16 deg 59' S
Approximate Lon: 108 deg 03' E
Observing Ship/Sensor: MV Port Huon (an Australian Selected Ship)
Observor(s): (?)
Description: 8th August 1966 at 1100 GMT in 16 deg 59'S, 108 deg 03'E. As darkness fell the sea was observed to be a bright greenish colour and extremely luminous, all white horses and wake becoming invisible, giving the appearance of an absolutely flat calm sea rather resembling a vast expanse of snow covered land, extending to the horizon. The light being emitted from the sea was such that all stars became invisible, no planets or moon being in the sky at that time. At 1335 the vessel passed out of this patch into normal sea water, the outer limits of the patch being well defined. From 1350 to 1430 another area was encountered exactly as the previous one, with equally well defined limits. At 1555 yet another such area was encountered but due to moon rise at 1400 further observation was impossible. At the time of the observation the vessel was steaming on a true course of 104 deg and 20 knots, the wind remaining a constant SE force 3 throughout the period and the barometer reading 1017.7 and falling flowly, showed no appreciable change in tendency. The sea and air temperature also remained constant at 74 and 73 degrees respectively. The cloud cover at first was now becoming 5/8th at moon rise. No magnetic anomaly was observed and the echo sounder, running throughout the period, showed no echo. Several samples of the sea water were obtained but on being put through several tests by engine room officers were found to be no different to ordinary sea water, however, the samples were retained in the hope of more detailed analyses later.
Reported In: Letter to Dr. Kay
Approx Location: SSW of Christmas Island
Confidence In Sighting: High Confidence

1.207 Christmas Island 1966 B

Observation Start Date: 08/10/1966
Observation Start Hour: 22:09 LOC
Observation End Date: 08/11/1966
Observation End Hour: 23:10 LOC
Approximate Lat: 14 deg 12' S
Approximate Lon: 107 deg 05' E
Observing Ship/Sensor: SS Vitrea
Observor(s): E.L. de Ruiter, 4th Officer; J. P. Hendriks, 3rd Officer
Description: Van de 4e stuurman van het ss. "Vitrea" (Shell Tankers N.V.), de heer E.L. de Ruiter, werd het navolgende rapport ontvangen m.b.t. een waarneming van het verschijnsel "melkzee" (de waarneming geschiedde door genoemde 4e stuurman en door de 3e stuurman, de heer J.P. Hendriks).

Varende in de Indische Oceaan, ongeveer 240 zuid van Christmas Isl., in positie 14 deg 12' Z en 107 deg 05' O, op weg van Geelong naar Miri, werd aan boord van het ss. "Vitrea", onder gezagvoerder Th. J. v. d. Vrie, een witte melkzee waargenomen. De zee werd op de EW van 10 augustus 1966 te 20.09 scheepstijd (12.09 GMT) vrij snel geheel wit. Bij eerste oopgopslag leek het of in een sneeuwlandschap werd gevaren; ook werd eerst gedacht, dat het schip in een laaghangende mistbank was terecht gekomen. Nadat de ogen enigszins aan de toestand waren gewend, werd geconstateerd dat de zee rondom geheel wit was. Direct werden meteo-waarnemingen verricht, met onderstaand resultaat: Temperatuur drogebol: 24.8. Temperatuur nattebol: 24.0. Temperatuur zeewater: 25.3. Wind: zuidoost, kracht 3. Geen deining PPP: 1013.3. Bewolkt gedeelte: 3/8 Cm: 1 (zeer dunne Altostratus). Koers: 345 deg. Snelheid: 16 mijl per uur. Hoewel er windkract 3 was, ontstond na verloop van enige tijd een nagenoeg spiegelgladde zee. Ook het s.g. van het zeewater werd bepaald (1,026). Toen we het zoeklicht op het water lieten schijnen, lichtten talrijke deeltjes eerst zilverachtig en later roodachtig op. De bewolking nam snel af, totdat er geen bewolking meer was. Tot 22.00 bleef de zee egaal wit. Ne 22.00 kwamen er steeds meer donkere plekken. Te 22.55 was de zee weer geheel normal. Op de EW 11 augustus de zee te 21.00 weer geleide lijk wit te worden, achteruit beginnend. Wederom werden meteorwarnemingen verricht. De toestand bleef zo tot 23.10. De zee werd toen in een tijd van een halve minuut weer geheel normaal. Meteo-waarneming van 11 augustus 21.35: Temperatuur drogebol: 25.0. Temperatuur nattebol: 24.5. Temperatuur zeewater: 25.2. Wind: OZO, kracht 3. Geen deining: Geen bewolking PPP: 1009.8. Koers: 357 deg. Snelheid: 16 mijl per uur.
Reported In: Tim Wyatt, Unpublished Notes/Paper
Approx Location: Christmas Island
Confidence In Sighting: High Confidence

1.208 Somalia/Socotra 1966 B

Observation Start Date: 08/12/1966
Observation Start Hour: 19:00 UNK
Observation End Date: 08/12/1966
Observation End Hour: 20:00 UNK
Approximate Lat: 11 deg 53' N
Approximate Lon: 57 deg 55' E
Observing Ship/Sensor: MV Benarthy (20560)
Observor(s): (?)
Description: 12th August 1966 at 1900 in 11 deg 53' N, 57 deg 55' E. A glow, grey-blue in colour covers the sea all round the ship. It seems to be a fine salt spray perhaps with phosphorescent content. It looks as if it is what is called white water. The phenomenon lasted approximately 1 hour.
Reported In: Letter to Dr. Kay
Approx Location: Somalia/Socotra
Confidence In Sighting: High Confidence

1.209 Somalia/Socotra 1966 C

Observation Start Date: 08/13/1966
Observation Start Hour: 20:45 GMT
Observation End Date: 08/14/1966
Observation End Hour: 00:45 GMT
Approximate Lat: 10 deg 47' N
Approximate Lon: 58 deg 25' E
Observing Ship/Sensor: MV Trebartha (20582)
Observor(s): (?)

Description: 13th August 1966 at 2045 GMT in 10 deg 47'N, 58 deg 24'E. The vessel was seen to be approaching an area of water appearing whitish in colour and shortly afterwards entered the area. It appeared as if the sea were being lit from below by powerful lights. The brilliance of this colour soon caused the eyes to ache if constantly focussed on the sea and a very sharp horizon could be observed between the sea and the sky. The bow wave of the ship and the crests of the breaking waves were lost entirely and this gave the effect of the sea being calm. The sea temperature was found to have risen by 8 deg since the previous observation. The effect lasted for approximately 2 1/2 hours and then slowly faded to normal over a futher 1 1/2 hour period.
Reported In: Letter to Dr. Kay
Approx Location: Somalia/Socotra
Confidence In Sighting: High Confidence

1.210 Christmas Island 1966 C

Observation Start Date: 08/13/1966
Observation Start Hour: 12:40 GMT
Observation End Date: 08/13/1966
Observation End Hour: 15:35 GMT
Approximate Lat: 9 deg 00' S
Approximate Lon: 106 deg 45' E
Observing Ship/Sensor: SS Avedraehl
Observor(s): J. Visser, 3e Stm.; J. Heuvink 4e Stm.
Description: Varende in de Indische Oceaan, van Sumatra naar Sydney, werd het volgende verschijnsel waargenomen. Te ongeveer 12.25 werd recht vooruit een wit schijnsel waargenomen, zo nagenoeg van hetzelfde karakter als bij ochtendschemering. Te 12.40 werd een milkachtige streep zichtbaar aan de horizon. Na verloop van tijd was het zichtbaar over de gehele horizon. In de boeggolf waren paars fluorescerende punter zichtbaar. Met behulp van seinlamp werd het wateroppervlak beschenen, de kleur in het licht was licht groen. Er was geen merkbare verandering in de zeegang waar te nemen. De paarse punten waren elk op zich zeer korte tij d zichtbaar, en gaven de indruk zich zeer snel door het water te bewegen. Te 15.20 begon het verschijnsel geleidelijk af te nemen, te 15.35 was het niet meer zichtbaar. Begin: T droge bol: 25.0. T natte bol: 23.5. T water: 25.0. Wind: richting: 140; snelheid: 17. Eind: T droge bol: 25.1. T natte bol: 22.2. T water: 25.0. Wind: richting: 140; snelheid: 17.
Reported In: Tim Wyatt, Unpublished Notes/Paper
Approx Location: Christmas Island
Confidence In Sighting: High Confidence

1.211 Java 1966 A

Observation Start Date: 08/15/1966
Observation Start Hour: 14:00 GMT
Observation End Date: 08/15/1966
Observation End Hour: 15:10 GMT
Approximate Lat: 7 deg 45' S
Approximate Lon: 105 deg 15' E
Observing Ship/Sensor: MV Queensland Star (20930-1)
Observor(s): (?)
Description: 15th August 1966 between 1400 and 1510 GMT in mid position 7 deg 45' S, 105 deg 15' E, entered area of milky water. Boundary marked by clear line, sea noticeably lighter than night sky. Sea water samples were obtained but water was clear. At 1500 vessel passed out of milky water again crossing a clear boundary.

Reported In: Letter to Dr. Kay
Approx Location: Java
Confidence In Sighting: High Confidence

1.212 Java 1966 B

Observation Start Date: 08/15/1966
Observation Start Hour: 21:10 GMT
Observation End Date: 08/15/1966
Observation End Hour: 22:10 GMT
Approximate Lat: 10 deg 00' S
Approximate Lon: 112 deg 00' E
Observing Ship/Sensor: SS Avedraehl
Observor(s): W. Snoek, 1e Stm.; R.H.F. Kemp, llstm.
Description: Varende in de Indische Oceaan, op weg van Sumatra naar Sydney, werd wederom het verschijnsel "melksee" waargenomen. Vanaf 21.10 nam het verschijnsel geleidelijk toe, tot zichtbaar over de gehele horizon. Geen merkbare verandering in de zeegang. Enige heldere punten in de boeggolf waar te nemen. Vanaf 22.10 nam het verschijnsel geleidelijk af, en was te 22.15 hiet meer te zien. T droge bol: 23.2. T natte bol: 19.4. T water: 23.0. Wind: richting: 250. snelheid: 05.
Reported In: Tim Wyatt, Unpublished Notes/Paper
Approx Location: Java
Confidence In Sighting: High Confidence

1.213 North Atlantic 1966

Observation Start Date: 10/07/1966
Observation Start Hour: 20:00 GMT
Observation End Date: 10/08/1966
Observation End Hour: 06:00 GMT
Approximate Lat: 46 deg 23' N
Approximate Lon: 18 deg 46' W
Observing Ship/Sensor: MV Geestcape (20927)
Observor(s): (?)
Description: Castries (West Indies) towards Barry. 7th-8th October 1966. A large area of intensive bioluminescence was encountered in the area between 46 deg 23' N, 18 deg 46' W and 48 deg 02'N, 16 deg 11'W. The luminescence first became visible at about 2000GMT/7 when it became truly dark. The most intense period was between this time and 2400 when the rising moon decreased the brilliance somewhat. However the luminesecence was still visible until about 0600 when increasing daylight made it invisible.
Reported In: Letter to Dr. Kay
Approx Location: North Atlantic
Confidence In Sighting: High Confidence

1.214 Socotra 1967

Observation Start Date: 01/05/1967
Observation Start Hour: 16:15 GMT
Observation End Date: 01/06/1967
Observation End Hour: 11:00 GMT
Approximate Lat: 13 deg 15' N

Approximate Lon: 56 deg 30' E
Observing Ship/Sensor: MS Amsteldiep
Observor(s): D. H. Zijlmans, Captain; D.M. Harms, Third Officer
Description: Varende in de Indische Oceaan, ongeveer 140 mijl ONO Socotra, positie 13.54 N 56.25 E in de koers 221 R.W., vaart 16 mijl per uur van Karachi naar Mombasa, werd gedurende de E.W. van 5 januari 1967 en de H.W. van 6 januaryi 1967 het volgende waargenomen: Te ongeveer 16.15 GMT op 5 januaryi 1967 werd de zee geleidelijk lichter van kleur en te 16.30 was deze nagenoeg wit. De bewolking bestond op dat moment uit Cumulus (CL=1) en AltoCumulus (CM=4) en het bewolkte gedeelte der lcuht bedroeg ongeveer 2/8. Tijdens de "melkzee" nam de bewolking vrij shel tot tot N=7. Bij het beschijnen van het wateroppervlak d.m.v. de Aldislamp werd een groot aantal hei wit oplcihtende deeltjes geconstateerd, doch van rode deeltjes, zoals deze genoemd worden bij diverse anders waarnemingen van het verschijnsel "melkzee", was in dit geval absoluut geen sprake. Te 18.00 werden enige grote donkere plekken in het water waargenomen en te 18.10 verkreeg de zee snel weer haar normale aanzien. Te 18.20 deed zich hetzelfde verschijnsel voor tot 18.55. Hierna nogmaals van 20.10 tot 22.00 en van 22.15 tot 23.00. Waarnemingen bij het begin van het eerste verschijnsel: Temp. Natte Bol: 20.00 gradens C. Temp. Droge Bol: 23.8 gradens C. Temp. Zeewater: 24.2 gradens C. Barometer: 1014.9 mb. Wind: 55 gradens-09 kts. Waarnemingen direct na het eerste verschijnsel: Temp. natte bol: 19.2 gradens C. Temp. droge bol: 23.8 gradens C. Temp. zeewater: 24.2 gradens C. Barmeter: 1014.8 mb. Wind: 55 gradens-09 kts.
Reported In: Tim Wyatt, Unpublished Notes/Paper
Approx Location: Socotra
Confidence In Sighting: High Confidence

1.215 Somalia/Socotra 1967 A

Observation Start Date: 01/06/1967
Observation Start Hour: 20:00 UNK
Observation End Date: 01/06/1967
Observation End Hour: 24:00 UNK
Approximate Lat: 12 deg 40' N
Approximate Lon: 55 deg 11' E
Observing Ship/Sensor: MV Sugar Exporter (20804)
Observor(s): (?)
Description: 6th January 1967 about 90 miles east-north-east of Socotra: through the 8-midnight watch, the sea had the appearance of being milky white from ship to horizon.
Reported In: Letter to Dr. Kay
Approx Location: Somalia/Socotra
Confidence In Sighting: High Confidence

1.216 NW Indian Ocean 1967 A

Observation Start Date: 01/07/1967
Observation Start Hour: 18:30 GMT
Observation End Date: 01/07/1967
Observation End Hour: 19:30 GMT
Approximate Lat: 12 deg 00' N
Approximate Lon: 51 deg 36' E
Observing Ship/Sensor: MV Astyanax (20956)
Observor(s): (?)
Description: Aden towards Singapore. 7th January 1967 between 1830 and 1930 GMT in 12 deg 00'N,

51 deg 36'E, having just departed from Capa Guardifui on a course of 100 deg: The sea within the space of ten minutes took on a milky appearanced tinged with green and looked as though it was lighted from underneath by a diffused light; there was no phosphorescence present in the wash or in the breaking waves. The sea instead of being relatively darker than the sky was lighter and was much more noticeably so forward of the beam. We considered that there was some form of very low mist on the water, this theory being borne out by the fact that was wave crests seemed indistinct at any distance from the ship. The mist must have been low since Capa Guardifui light was visible throughout the period to distances reaching 25 miles. At 1915 GMT a black line appeared on the horizon forward of the beam and slowly approached. This was in actual fact, the sea returning to normal. The horizon remained phossy for about half an hour.
Reported In: Letter to Dr. Kay
Approx Location: NW Indian Ocean
Confidence In Sighting: High Confidence

1.217 Somalia 1967 A

Observation Start Date: 01/08/1967
Observation Start Hour: 15:45 GMT
Observation End Date: 01/08/1967
Observation End Hour: 18:50 GMT
Approximate Lat: 6 deg 18' N
Approximate Lon: 49 deg 44' E
Observing Ship/Sensor: SS Clan Mactavish (21285)
Observor(s): Captain W. J. Freestone
Description: Port Sudan towards Aden. 8th January 1967 at 1545 GMT in 6 deg 18' N, 49 deg 44' E, course 207 deg, speed 16 knots. Phosphorescence observed covering the entire surface of the sea to the horizon in all directions. Even milky white glow of moderate brilliance. Phosphoresecence ceased at 1850 GMT.
Reported In: Letter to Dr Kay
Approx Location: Somalia
Confidence In Sighting: High Confidence

1.218 NW Indian Ocean 1967 B

Observation Start Date: 01/12/1967
Observation Start Hour: 22:30 GMT
Observation End Date: 01/12/1967
Observation End Hour: 23:00 GMT
Approximate Lat: 14 deg 12' N
Approximate Lon: 49 deg 21' E
Observing Ship/Sensor: SS Brandon Priory (21013)
Observor(s): Mr. P. M. H. Carr, 2nd Officer, Mr. D. Richards, Able Seaman
Description: Bandar Mashur towards Land's End. 12th January 1967 at 2230 GMT in 14 deg 12' N, 49 deg 21' E. Vessel entered extensive luminescence; whole surface of the sea from horizon to horizon glows with uniform brightness giving the sea a white show like appearance lightly tinged with green. Ship's lights and horizon difficult to make out. Aldis lamp had no effect on luminescence though some bright parts of light observed in ship's wake. Sky had previously cleared from being lightly overcast and general appearance of the sea then was a pale white. The ENE force 2-3 wind had died down at 2300 GMT, sea was calm with no appreciable swell. At time of observation the sea temperature was 75 deg air temperature 75 deg, wet bulb 70.5 deg. Observed by Mr. P. M. H. Carr, 2nd Officer and Mr. D.

Richards, Able Seaman.
Reported In: Letter to Dr. Kay
Approx Location: NW Indian Ocean
Confidence In Sighting: High Confidence

1.219 NW Indian Ocean 1967 C

Observation Start Date: 01/17/1967
Observation Start Hour: 23:45 GMT
Observation End Date: 01/18/1967
Observation End Hour: (?)
Approximate Lat: 12 deg 15' N
Approximate Lon: 48 deg 28' E
Observing Ship/Sensor: MV Glenalmond (20960)
Observor(s): Mr. G. A. Berry, 2nd Officer, Mr. J. A. Davison, Cadet
Description: Suez towards Singapore. 17th January 1967 between 2345 and 0000 GMT in 12 deg 15' N, 48 deg 28' E, course 093 degrees, speed 21 knots. The sea took on a strange milky appearance, like a frozen lake; the beam from an Aldis lamp produced a sparkling jewelled effect. Initially there was 3/8th low cloud and when this cleared the sea returned to normal, only to have the effect recur when the cloud reformed. It was a dark night with excellent visibility. Air temperature 73.5 deg, wet bulb 67.3 deg, sea temperature 76.0 deg, wind ENE force 4. The same was seen for a short period the following night when there was no cloud and the horizon was extremely dark. Observed by Mr. G. A. Berry, 2nd Officer and Mr. J. A. Davison Cadet.
Reported In: Letter to Dr. Kay
Approx Location: NW Indian Ocean
Confidence In Sighting: High Confidence

1.220 Somalia/Socotra 1967 B

Observation Start Date: 01/17/1967
Observation Start Hour: 21:00 GMT
Observation End Date: 01/17/1967
Observation End Hour: (?)
Approximate Lat: 11 deg 26' N
Approximate Lon: 54 deg 14' E
Observing Ship/Sensor: MV Melampus (20787)
Observor(s): (?)
Description: 17th January 1967 at 2100 GMT in 11 deg 26'N, 54 deg 14'E: whilst passing south of Socotra, the ship entered a vast area of dull grey bioluminescence at midnight. The water, as far as the eye could see, was emanating a dull greyish glow. Individual bright yellow particles were visible under the beam of the Aldis lamp. The switching on and off of the radar set had no apparent effect. The vessel was traversing the area for most of the next four hours and thus its approximate extent was in the region of 60 miles or so. A sample of sea water was obtained and surgical spirit added as a preservative in the ratio 3 parts water to 2 parts spirit. In the event of the organisms not surviving, please be informed that upon examining the water after getting it on board, it was found to contain worm-like creatures varying in length between about 1mm and 1/2 cm. They appeared to be moving and had fibrous appendages. The sample will be forwarded at the same time as this logbook.
Reported In: Letter to Dr. Kay
Approx Location: Somalia/Socotra
Confidence In Sighting: High Confidence

1.221 NW Indian Ocean 1967 D

Observation Start Date: 01/22/1967
Observation Start Hour: 22:45 GMT
Observation End Date: 01/22/1967
Observation End Hour: 23:45 GMT
Approximate Lat: 10 deg 00' N
Approximate Lon: 54 deg 00' E
Observing Ship/Sensor: SS Ixion (21067)
Observor(s): Mr. J. Brunskill, 2nd Officer
Description: Aden towards Fremantle. 22nd January 1967 at 2245 GMT in 10 deg 00'N, 54 deg 00'E, course 126 deg, 18 1/2 knots. The sea from horizon to horizon in all directions took on a phosphorescence glow, not brilliant, but a definite glow similar to the glow of a luminous watch. The moon had just set and the whole sea was several shades lighter than the sky. The phosphorescence in the bow wave was not a great deal different to the overall effect. The phenomenon persisted until 2330 GMT, then the intensity decreased until at 2345 GMT the normal night conditions prevailed. When looking into the sea at the height of the phenomenon, it was almost impossible to focus the eye and a slight feeling of vertigo was experienced. This eeriness could well have convinced the superstitious mariners of long ago that the ship would fall off the edge of the world during the night if navigated far from the shore. Observed by Mr. J. Brunskill, 2nd Officer.
Reported In: Letter to Dr. Kay
Approx Location: NW Indian Ocean
Confidence In Sighting: High Confidence

1.222 South China Sea 1967 A

Observation Start Date: 02/03/1967
Observation Start Hour: 18:30 GMT
Observation End Date: 02/03/1967
Observation End Hour: 19:00 GMT
Approximate Lat: 18 deg 42 ' N
Approximate Lon: 116 deg 48' E
Observing Ship/Sensor: SS Venassa (20883)
Observor(s): (?)
Description: Nagasaki towards Singapore. 3rd January 1967 at 1830 GMT in 18 deg 42' N, 116 deg 48' E the north-east wind force 5 suddenly ceased. The sea became calm and the whole surface of the sea turned a greyish colour. It gave the appearance that the ship was steaming through a very low mist about 2 feet high, the horizon could not be distinguished although the mast and lights showed no signs of mist. At 1900 GM T the horizon again became visible and the vessel steamed back into normal water.
Reported In: Letter to Dr. Kay
Approx Location: South China Sea
Confidence In Sighting: High Confidence

1.223 Arabian Sea 1967

Observation Start Date: 02/05/1967
Observation Start Hour: 16:00 GMT
Observation End Date: 02/05/1967
Observation End Hour: 19:00 GMT

Approximate Lat: 12 deg 36' N
Approximate Lon: 44 deg 36' E
Observing Ship/Sensor: MV Essex
Observor(s): G. MacIver, Chief Officer; M. Handfield, Third Officer; P. Sawyer, Junior Third Officer
Description: 5th February 1967, 1600-1900 GMT. When the vessel was between Ras Mujallab Haidi and Ras Kaau large amounts of luminescence were seen, of several different types: (a) The ship's bow wave broke in brilliant emerald-green light, with occasional flashes which were bright enough to light up the ship's superstructure. (b) Little spots of sparkling light which were visible up to 3 miles. (c) The vessel passed through 3 or 4 long lines of luminescence which had the appearance of milk or white oil. In the darkness, at a distance of 2 miles or so, looked alarmingly like lines of breakers. The sea temperature bucket was used to get samples and, when brought back on deck, it and especially the rope were found to be covered with luminescence particles. Examination showed that the light was being emitted from semi-transparent egg-shaped objects about 1/16th inch long. Sea temp 77.3 deg F. Wind light and variable. Position of ship at 1800: 12 deg 36'N, 44 deg 36'E. [Maybe pyrosomes or ostracods?]
Reported In: Mar. Obs. 1968, 01, Vol XXXVIII, no 219
Approx Location: Arabian Sea
Confidence In Sighting: Low Confidence

1.224 Somalia 1967 B

Observation Start Date: 02/05/1967
Observation Start Hour: 19:00 GMT
Observation End Date: 02/05/1967
Observation End Hour: 20:30 GMT
Approximate Lat: 8 deg 30' N
Approximate Lon: 53 deg 42' E
Observing Ship/Sensor: MS Acteon
Observor(s): W. A. Kleine, Captain; W. C. Padmos, Third Officer
Description: Op de EW van zondag 5 februari 1967 wed d aan boord van het ms Acteon het verschijnsel "melkzee" waargenomen. Het schip was op weg van Kaapstad naar Abadan, koers 026 gradens toen ten 1900 GMT in positie 250 mijl zuid van Socotra de zee grijswit van kleur werd en heet leek alsof het schip in een mistbank liep. het zicht bleef echter goed want laagstaande sterren bleven helder zichtbaar. Alhoewel de wind met kracht 3 Bft bleef waaien leek de zee geheel af te vlakken en gaf ze het aanzicht van een sneeuwlandschap. het was 1/8 bewolkt, waarbij de bewolking bestond uit waarschijnlijk CL2 wolken aan de kim. De temperatuur van het zeewater bedroeg 25 gradens, droge bol 24,9 en natte bol 21,1. Dit waren dezelfde waarden als bij de waarneming van 1800 GMT. Windrichting 030 en nagenoeg geen deining. De boeggolf was nagenoeg niet meer te onderscheiden van het overige water. Bij het schijnsel van de Aldislamp op de zee werden rood reflecterende wegspringende deeltjes waargenomen. Het verschijnsel hield op tne 2030 GMT en werd ook later niet meer waargenomen. De rood reflecternde deeltjes bleven echter aanwezig. her verschijnlijk kwam, zij het onder een geringere bewolkingsgraad en ander jaargetijde, geheel overeen met dat genoemd in De Zee van maart 1966-Overdruk K.N.M.I. no 107.
Reported In: Tim Wyatt, Unpublished Notes/Paper
Approx Location: Somalia
Confidence In Sighting: High Confidence

1.225 Oman 1967

Observation Start Date: 02/09/1967
Observation Start Hour: 15:00 GMT

Observation End Date: 02/09/1967
Observation End Hour: 15:20 GMT
Approximate Lat: 18 deg 42' N
Approximate Lon: 58 deg 18' E
Observing Ship/Sensor: MV Linkmoor (21345)
Observor(s): Captain R. R. Jordon
Description: Aden towards Karachi. On the night of February 9th 1967 at 1500 GMT in 58 deg 18' N, 18 deg 42' E [I think the N and E coordinates are flipped] on course of 052 deg and a speed of 14.7 knots, rippled sea, cloudless, fine and clear; the wind was north-easterly force 1. The vessel encountered a large patch of extremely brilliant phosphorescence. It began in a perfectly straight line and extended beyond the observer's visible range. The vessel steamed through this patch for about 20 minutes covering a distance of 8 miles before it ended abruptly as it had begun.
Reported In: Letter to Dr Kay
Approx Location: Oman
Confidence In Sighting: High Confidence

1.226 NW Indian Ocean 1967 E

Observation Start Date: 02/09/1967
Observation Start Hour: 20:00 GMT
Observation End Date: 02/09/1967
Observation End Hour: 20:40 GMT
Approximate Lat: 8 deg 32' N
Approximate Lon: 54 deg 30' E
Observing Ship/Sensor: MV Port Victor (21192)
Observor(s): Mr. J. Simpson, Junior 3rd Officer, Mr. D. N. Ford 3rd Officer.
Description: Aden towards Adelaide. 9th February 1967 at 2000 GMT in 9 deg 32' N, 54 deg 30' E, course 137 deg, speed 16.5 knots. Between 1955 and 2040 vessel passed through a vast unbroken expanse of phosphorescence. The sea surface appearing a light greyish colour for at least 5-7 miles around. No moon present and sky very dark. Sea temperature 78 deg, air temperature 76 deg, wind NE'ly force 4, swell NE x E moderate-low, sea slight.
Reported In: Letter to Dr. Kay
Approx Location: NW Indian Ocean
Confidence In Sighting: High Confidence

1.227 South China Sea 1967 B

Observation Start Date: 02/11/1967
Observation Start Hour: 16:00 GMT
Observation End Date: (?)
Observation End Hour: (?)
Approximate Lat: 18 deg 40' N
Approximate Lon: 116 deg 30' E
Observing Ship/Sensor: SS Himalaya (21124)
Observor(s): Mr. M. Bingham, Junior Second Officer, Mr. Derrick, Junior Fourth Officer.
Description: Brisbane towards Hong Kong. 11th February 1967 at 1600 GMT in 18 deg 40' N, 116 deg 30' E. Large areas of marine bioluminescence observed. The sky was overcast and the sea was very dark. Suddenly a large white area of water was seen ahead which gave the impression of a fog patch. Once we entered the area the whole bridge was much lighter. The area was about 3 miles in diameter. Once we steamed through the sea returned to its dark colour and looking astern, the patch was clearly

visible. Observed by Mr. M. Bingham, Junior Second Officer and Mr. Derrick, Junior Fourth Officer.
Reported In: Letter to Dr. Kay
Approx Location: South China Sea
Confidence In Sighting: High Confidence

1.228 South China Sea 1967 C

Observation Start Date: 02/12/1967
Observation Start Hour: 20:00 UNK
Observation End Date: 02/13/1967
Observation End Hour: 05:00 UNK
Approximate Lat: 17 deg 15' N
Approximate Lon: 118 deg 02' E
Observing Ship/Sensor: MV Hang Sang (of Hong Kong)
Observor(s): Unknown Officers
Description: While in the south China Sea on the night of 12-13th February between about 2000 and 0500 and position 17 deg 15'N, 118 deg 02'E and 18 deg 06'N, 117 deg 32'E on a course of 323 deg, speed 5 1/2 knots the following was observerd: The sea stretching as far as the horizon on all sides appeared to be transluscent and coloured with foam or of the same shade showing a glazed appearance; there did not seem to be much difference between breaking waves and those that did not break. The Aldis lamp was trained frequently on the surface to see if anything could be seen. The sea close to the ship appeared much denser and calmed. The night was moonless and cloudy in patches and at times completely clear with bright stars followed closely by being completely overcast. Those overcast periods would for about half an hour and during this time the transluscence would be dimmed without fading away entirely. The horizon appeared very definite and visibility was a about 10-12 miles. The following impressions which this phenomena gave to ship's officers: a. Moonlight on heavily frosted lawns. b. A glass negative plate, which when held up to light with the negative of a sea scape on a suddy day shows great contrast between sea and sky. c. Bright moonlight shining on water with no shadow as if the sea was covered with microfilm of aluminium paint emitting a vague luminescence.
Reported In: Letter to Dr. Kay
Approx Location: South China Sea
Confidence In Sighting: High Confidence

1.229 Somalia/Socotra 1967 C

Observation Start Date: 02/16/1967
Observation Start Hour: 20:10 GMT
Observation End Date: 02/17/1967
Observation End Hour: 00:10 GMT
Approximate Lat: 3 deg 30' N
Approximate Lon: 51 deg 00' E
Observing Ship/Sensor: SS Regent Pemrpoke (21601-2)
Observor(s): P. Taylor and R. Warren
Description: Ras Tannura towards Philadelphia via Cape. 16th February 1967 at 2010 GMT in 3 deg 30' N, 51 deg 00' E, course 205 deg, speed 16 knots. Vessel entered an area where the sea was a milky grey colour which to some extent lit up the vicinity relative to the blackness of the night. The wind was variable light airs, later becoming north-easterly 10 knots with the sky half clouded. On shining the Aldis light on the sea surface, many bright points of light, similar ot that reflected from cats eyes on a road, were seen in the beam. The luminescence covered a considerable area as the vessel remained in the phenomenon for about 4 hours. For one period of 15 minutes we left the luminous area but on

approaching more of it the sudden and clear cut transition between black sea and luminescence sea was distinctly visibly at a distance of at least one mile, very similar in appearance to an approaching fog bank. The most noticeable features of this phenomenon as compared with the more usual brilliant green luminescence encountered were that firstly with the latter, an approaching vessel cannot determine the area of luminescence until the wash disturbs it, with the phenomenon the area was most obvious and secondly passage of the ship through it had no effect on its luminosity. Although whilst in the area almost all the area was affected by the luminescence, there were very occasional isolates strips of dark sea, about 1 ft wide and from 10-100 yards in length. Observed by Messrs P. Taylor and R. Warren
Reported In: Letter to Dr. Kay
Approx Location: Somalia/Socotra
Confidence In Sighting: High Confidence

1.230 Phillipines 1967

Observation Start Date: 02/19/1967
Observation Start Hour: 15:45 GMT
Observation End Date: 02/19/1967
Observation End Hour: 19:50 GMT
Approximate Lat: 18 deg 26' N
Approximate Lon: 118 deg 28' E
Observing Ship/Sensor: MV Eastern Muse
Observor(s): Captain G. Kinley
Description: The whole of the surrounding sea took on a sudden "milky white" appearance causing the ship to stand out in clear silhouette. This phenomenon lasted for 20 minutes when it abrupted ended in a visible distinct line. An Aldis beam projected into the night, revealed considrable, what was presumed, salt particles in suspension. At 1950 GMT on the same day in 18 deg 06' N, 118 deg 00' E this phenomenon occurred again only to a more pronounced degree. Ship appears to be crossing a snow field which stretches to the visible horizon.
Reported In: Letter to Dr Kay
Approx Location: Phillipines
Confidence In Sighting: High Confidence

1.231 South China Sea 1967 D

Observation Start Date: 02/26/1967
Observation Start Hour: 19:10 LOC
Observation End Date: 02/26/1967
Observation End Hour: 22:00 LOC
Approximate Lat: 18 deg 44' N
Approximate Lon: 113 deg 32' E
Observing Ship/Sensor: MS Mersey Lloyd
Observor(s): W.H.M. van Lanen, 4th Officer
Description: Van de 4e stuurman, de heer W.H.M. van Lanen, van het ms "Mersey Lloyd", onder gezagvoerderschap van Kapitein I.J.L. Risseeuw, werd het volgende rapport van de waarnemining van bogengenoemd verschijnsel ontvangen. "Varende in de Zuidchinese Zee, ongeveer 190 mijl zuid ten westen van Hong Kong, op weg van Singapore naar Hong Kong, werd gedurende de PV en EW van 26 februari 1967 het verschijnsel "melkzee" waargenomen. Te ongeveer 19.10 werd recht vooruit op een aftstand van ca 3 mijl een zware buiige bewolking waargenomen, waaruit het scheen te regenen. De radar werd bijgezet maar er ward van deze zogenaamde bui geen echo ontvangen. De lucht was geheel bedekt met stratusbewolking. Deze stak grauw af t.o.v. de zee. De wolkenbasis lag op ongeveer 300

meter. Te 19.21 werd de zee plotseling egaal wit. Er was zonder kijker geen kim waar te nemen en de bewolking scheen dezelfde kleur te hebben aangenomen als het zeewater. Keek men in de richting tegengesteld aan de koers, dan leek het alsof er een zwarte blinde muur achter het schip hing en voor ons een grote lege ruimte, waarin het schip scheen te zweven. De top- en boordlichten straalden niet uit en van mist was dan ook geen sprake. Bij nader onderzoek van het zeewateroppervlak bleek, dat de witte schuimkoppen van de golven niet of maar een enkele keer zeer dicht bij het schip waren te zien, daar er geen kleurschakering aanwezig was. Er was ook geen boeggolf te zien. Alleen het buiswater dat over dek kwam viel op. Er stond een wind uit NNO-lijke richting, kracht Bft. 5. Daar de schuimkoppen van de golven slecht waren waar te nemen, scheen het alsof de zee was afgeylakt, maar de wind was op het gevoel niet afgenomen. Iedereen die op de brug kwam maakte de opmerking: "het lijkt wel dikke mist of een sneeuwlandshcap, of het vliegen in wolken". Met een kijker (7x50) kon een kim worden waargenomen, daar de bewolking iets donkerder was dan de zee. Er werd zeewater geputst om de zeewatertemperatuur te bepalen en te onderzoeken of men met zeevonken te doen had. Het door water roeren of tegen de puts stoten leverde geen poltseling oplichten op van zeevonken, wat anders vaak een normaal verschijnsel is. Ook werd er met een zaklamp i het water van de puts geschenen, maar dit leverde geen reakties op. Van 21.10 tot 21.15 nam het verschijnsel grotendeels af, maar even later kwam het weer terug, doch in mindere mate als daarvoor; dit duurde tot 22.00. Te 22.00 zag men de grens van de melkzee naderen. Deze weer normale situatie zag men als een zwarte baan op zich afkomen. De positie te 19.21 was 18 deg 44' N en 113 deg 32' O en te 22.00 19 deg 16' N en 113 deg 34' O. Hiertussen was een afstand van 48 mijl afgelegd. De diepte volgens de kaart was tussen 600 en 1000 vadem. Te 20.15 werd een monster van het zeewater genomen, dat niet werd geconserveerd omdat de methode beschreven in de "Handleiding voor het verrichten van meteorologische waarnemingen op zee" (KNMI-publikatie 118 b) niet mogelijk was bij afwezigheid van het conserveringsmiddel. Waarnemingen te 19.25 verricht: Zeewatertemp: 22.9 deg C. Drogebol 22.8 deg C. Nattebol: 20.2 deg C. Luchtdruk: 1018.8 mb. Windrichting: NNO. Kracht: 5. Matige NNO-lijke deining. Het verschijnsel begon 50 minuten na zonsondergang. het was volle maan, maar deze kon door de bewolking niet worden waargenomen. Of er nog andere schepen zijn geweest die dit verschijnsel hebben waargenomen valt te betwijfelen, daar er op de radar geen andere schepen werden opgemerkt. Bij aankomst te Rotterdam (ongeveer eind april a.s.) zal het monster zeewater u voor verder onderzoek worden toegezonden."
Reported In: Tim Wyatt, Unpublished Notes/Paper
Approx Location: South China Sea
Confidence In Sighting: High Confidence

1.232 South China Sea 1967 E

Observation Start Date: 05/09/1967
Observation Start Hour: 02:25 LOC
Observation End Date: 05/09/1967
Observation End Hour: 03:55 LOC
Approximate Lat: 31 deg 00' N
Approximate Lon: 122 deg 35' E
Observing Ship/Sensor: SS Radja
Observor(s): H. van der Stoop, Captain; M. H. Krekt, 2nd Officer
Description: Op 9 mei, ongeveer 1 uur na het afzetten van de Shanghai loods, onderweg van Shanghai naar Singapore werd door ons het volgende verschijnsel waargenomen. Te 02.25 uur scheepstijd varende in positie Noord 31 deg 00' Oost 122 deg 35' werd aan de kim een lichte streep waargenomen. Het was geheel bewolkt en de bewolking bestond uit Cl. 6. Het was dus erg donker. Deze witte streep werd steeds breder totdat we in een geheel witte zee voeren. De windsnelheid was ongeveer 20' per uur, dus witte koppen op de golven. Door de grote duisternis en de helderheid van de zee was het een interessant gezicht. Veel opvarenden werden ook uitgepord om dit niet te missen. Het geheel had veel weg van een winter landschap of een bevroren meer bedekt met sneeuw. Door de lichtbundel van een vuurtoren en

enkele vuurtjes van visserschepen werd het geheel nog geaccentueerd. Het water uit de koelwater uitlaat gellek een vuurspuwende mond. Door ons werden meteen enekele putsen water opgeslagen. Als je er in ging roeren werd het water zo licht dat je er bij wijze van spreken bij kon lezen. Goot je het water weg, dan waren het allemaal witte celletjes die weg vloeiden. Door de kapitein werd een glas met dit water gevuld. In het licht van de kaartenkamer bleek dat er celletjes in dreven ter grootte van een suiker korrel. Deed je het licht uit en begon je te roeren, dan begon het meteen weer op te lichten. Goot je het water over je handen dan bleven er allemaal lichtpuntjes opzitten. Ookal wreef je er over heen het bleef toch oplichten. Je kon de lichtpuntjes ook laten verspringen. Het bleef dus een hele tijd nalichten. Tot 03.45 uur hebben we zo in deze witte zee gevaren. Soms was het iets minder maar in het algemeen was de zee gewoon wit. De overgang naar een gewone zee ging heel plotseling. Ineens zag ik geen kim meer en aanvankelijk dacht ik dat het mistig werd, maar het bleek dat het fluoriseren opgehouden had. Het was weer net zo'n vreemde gewaarwoding om in deze normale zee te varen als het was om in deze melkzee te varen, Onze positie te 03.45 uur was N. 30 deg 55' N Oost 123 deg 00'. Verdere meteo gegevens zijn: d.d. 33 ff. 20' barometerstand 1015,0 temp. zeewater 16.6 Celcius, droge bol 16,0 natte bol 15,1. Lage bewolking. Golven met toppen.
Reported In: Tim Wyatt, Unpublished Notes/Paper
Approx Location: South China Sea
Confidence In Sighting: High Confidence

1.233 Christmas Island 1967

Observation Start Date: 06/11/1967
Observation Start Hour: 16:10 GMT
Observation End Date: 06/11/1967
Observation End Hour: (?)
Approximate Lat: 13 deg 16' S
Approximate Lon: 108 deg 46' E
Observing Ship/Sensor: MV Runswick (21405)
Observor(s): Captain S. Ward
Description: Mackay towards Cape Town. 11th July 1967 at 1610 GMT in 13 deg 16' S, 108 deg 46' E, course 262 deg. The vessel entered an area of ocean completely illuminated by phosphorescence. The border of the area was well defined and could be seen on approach at a distance of about 2 miles. The familiar green disks of light were not present and instead the whole area which we judged to be some 5 miles square in extent, glowed, shedding a strong pale green light. In the centre of the affected water, the light given off from the sea was particularly intense, illuminating the base of a low cloud ahead and the entire superstructure of the ship. The sea and swell prevailing locally appeared to be quieter within this area.
Reported In: Letter to Dr Kay
Approx Location: Christmas Island
Confidence In Sighting: High Confidence

1.234 North Atlantic 1967

Observation Start Date: 07/12/1967
Observation Start Hour: 02:15 GMT
Observation End Date: 07/12/1967
Observation End Hour: (?)
Approximate Lat: 50 deg 05' N
Approximate Lon: 34 deg 20' W
Observing Ship/Sensor: MV Camellia (21562)

Observor(s): (?)
Description: Rotterddam towards Little Narrows. 12th July 1967 at 0215 GMT in 50 deg 05'N, 34 deg 20'W, course 264 deg, speed 12 knots. Glow extending starboard of vessel at first indication appeared it might be an ice field. Glow getting brighter and radar switched on, indication from radar showed a picture and vessel passed through thick phosphorescence. Visibility good. At 0300, light drizzle with distance lightning. The field of phosphorescence extended to the north of the vessel and vessel passed through approximately 6 miles of it.
Reported In: Letter to Dr. Kay
Approx Location: North Atlantic
Confidence In Sighting: Low Confidence

1.235 Somalia 1967 C

Observation Start Date: 07/17/1967
Observation Start Hour: 18:00 GMT
Observation End Date: 07/17/1967
Observation End Hour: 19:15 GMT
Approximate Lat: 04 deg 17' N
Approximate Lon: 49 deg 03' E
Observing Ship/Sensor: MV Amoria (32848)
Observor(s): J.C. Oag, Third Officer
Description: Time of observation - 18:00 GMT Course 036 deg (T) Latitude - 04 deg 17'N Longitude - 049 deg 03'E Speed - 13.4 Kts Bridge Ht - 52 ft Mtwara bound for Mina al Fahl. Air Temp - 24.8 deg C Dry - 24.7 deg C Wet Dew Point - 25 deg C Sea Temp 23.0 deg C Wind direction - 210 deg (approx) Wind Speed - 17 Kts (approx) Pressure - 1013.8 mb. On analysing the above data, the sea temperature was found to be well below that of previous observations and the sea temperature isothermal shown on the weather and routing chart for the month of July. Whilst the above information was being logged the watchkeeper called the O.O.W. to the port bridge wing, reporting 'FOG' on the port bow. From about right ahead to 2 points for'd of the beam, at not more than 5 miles, there was a bank of white mist apparently above the water, obliteration of the horizon in that quadrant. In contrast, the horizon on the starboard quarter was sharply defined, the sky black and starlit, the moon not yet having risen, against the sea which was milky white in colour. Previously the wind had been south to southwesterly, force 4/5 producing a moderate to rough sea, but this had considerably subsided to just occasional white horses; those close to the ship appearing very white. 18:35 - Air temp (Dry):24.6 deg C; visbility seeming to be only about 2 miles, but no horizon against which to judge distances or the extent of the height above the water of the phenomena in the for'd quadrant, port side. On the starb'd quarter the whiteness appeared only to extend approximately 1 to 2 feet above the water. The stars above the vessel seemed undimmed. 18:45 - Lowest actually recorded air temperature (dry) -: 24.4 deg C. 19:00 - The vessel 'abeam' of the phenomena, the horizon ahead clearing, the whiteness dispersing. The chart being used showed in excess of 1000 fathoms, the echo sounder when switched on showed no trace. 19:15 - The sea temp taken again -: 25.0 deg C; Air temp (dry) 24.9 deg C. The air at this time was very moist, the bright wing taff rails being beaded with water droplets; it had not been raining. When the Aldis lamp was shone into the air, the light was severely diffused by small water droplets suspended in the air; Potential fog spread out by too high a wind speed?
Reported In: Letter to Dr. Herring
Approx Location: Somalia
Confidence In Sighting: High Confidence

1.236 Banda Sea 1967

Observation Start Date: 08/02/1967
Observation Start Hour: 15:40 GMT
Observation End Date: 08/02/1967
Observation End Hour: 18:20 GMT
Approximate Lat: 00 deg 23' S
Approximate Lon: 127 deg 52' E
Observing Ship/Sensor: MS Van Cloom
Observor(s): (?)
Description: [This account was acquired as a faded photocopy of a hand written note marked as a Milky Sea by Tim Wyatt while the date and location could be deciphered. not much else could be.]
Reported In: Tim Wyatt, Unpublished Notes/Paper
Approx Location: Banda Sea
Confidence In Sighting: High Confidence

1.237 Java 1967

Observation Start Date: 08/05/1967
Observation Start Hour: 19:30 GMT
Observation End Date: 08/06/1967
Observation End Hour: 04:12 GMT
Approximate Lat: 7 deg 39' S
Approximate Lon: 105 deg 18' E
Observing Ship/Sensor: MV Rhexenor (of Australia)
Observor(s): (?)
Description: 5th August 1967 at 1930 in 7 deg 39'S, 105 deg 18'E, course 162 deg speed 15 knots. The colour of the sea changed to milky white with a distinct line on the surface at the same time the sea appeared to become smoother although the swell remained. Approximate charted depth 1043 fathoms. No phosphorescence appeared in the wake. The sea remained milky until 1950 when it began to fade and finally disappeared by 1955. There was no moon. Again from 2230 to 2330 in the area 8 deg 15'S, 105 deg 30'E the above was experienced but the whiteness extended to the horizon lightening the sea, making the sky appear darker than usual just above the horizon. No clouds were present. The sea appeared blurred; to focus on it proved most difficult. On 6th august 1967 at 0412 in 9 de 43'S, 105 deg 58'E the effect was repeated. Clouds illuminated and several shades lighter than the sky.
Reported In: Letter to Dr. Kay
Approx Location: Java
Confidence In Sighting: High Confidence

1.238 Timor-Leste 1967

Observation Start Date: 08/07/1967
Observation Start Hour: 17:00 GMT
Observation End Date: 08/07/1967
Observation End Hour: 21:30 GMT
Approximate Lat: 9 deg 09' S
Approximate Lon: 130 deg 59' E
Observing Ship/Sensor: SS Ixion (21484)
Observor(s): Captain F. N. Curphey
Description: Brisbane towards Singapore. 7th August 1967 at 1700 GMT in 9 deg 09' S, 130 deg 59' E. The complete area of sea visible from the vessel took on a milky appearance and became so bright

that the horizon became very well defined. No individual bursts of phosphorescence were apparent and none occurred in the wash of the ship. Prior to the phenomenon occurring it had been very dark with total cloud cover and no moon. The phenomenon persisted until 1830 GMT (9 deg 03'S, 130 deg 31'E) and as the ship left the area the lighter water could be seen at a distance of approximately 5 miles. Sea temperature 78 deg F, wind light and variable force 2. Ship's course 282 deg speed 19 knots. This phenomenon occurred again on a smaller scale at intervals between 1830 GMT and 2130 GMT (0600 at ship) when it became daylight.
Reported In: Letter to Dr. Kay
Approx Location: Timor-Leste
Confidence In Sighting: High Confidence

1.239 Timor Sea 1967

Observation Start Date: 08/14/1967
Observation Start Hour: 16:45 GMT
Observation End Date: 08/14/1967
Observation End Hour: 21:05 GMT
Approximate Lat: 8 deg 54' S
Approximate Lon: 129 deg 43' E
Observing Ship/Sensor: MS Neder Eems
Observor(s): A.N.S. Gerus, Captain
Description: Aan board van het m.s. "Neder Eems" van de Stoomvaart Mij. "Nederland", gezagvoerder de heer A.N.S. Gerus, werd een geval van "melkzee" waargenomen. Het desbtreffende rapport hierover, opgemaakt door de 1e stuurman, de heer N. Veldhuizen, luid als volgt. "Varende in de Timorzee, op weg van Noumea naar Singapore, werd op de H.W. van 14 augustus 1967 het verschijnsel "melkzee" waargenomen. Te 16.45 MTG werd vrij snel de gehele horizon één witte oppervlakte, waarop het schuim van onze boeggolf niet meer zichtbaar was. Het gegist bestek bij aanvang was: 08 deg 45' Z en 128 deg 43' O. Koers 294 deg, vaars 13 mijl per uur. Temperatuur drogebol: 25 deg C. Temperatuur nattebol: 21.2 deg C. Barometer: 1012.5 mbar. Bewolking: nil. Wind: oost, 3 Bft. Temp. zeewater: 25.6 deg C. S.G. zeewater: 1024. Het S.G. werd bepaald met een salinometer, die geijkt is voor 15 deg C. Het S.G. werd niet hiervoor gecorrigeerd. De zee bleef in deze toestand tot 17.55 MTG en werd daarna geleidelijk minder wit; te 18.13 was het verschijnsel geheel verdwenen. Het gegist bestek was toen 08 deg 48' Z en 129 deg 28' O. Temperatuur drogebol: 25 deg C. Temperatuur nattebol: 21.5 deg C. Barometer: 1012.5 mbar. Bewolking: nil. Wind: oost, 2 tot 3 Bft. Temp. zeewater: 25.5 deg C. S.G. zeewater: 1024. Op de D.W. werd te 19.30 MTG in gegist bestek 08 deg 39' Z en 128 deg 00' de zee water lichter aan b.b.-zijde, daarna kwam van de kim aan s.b.-zijde ook een lichte vlek aan. Gedurende de volgende tien minuten voer het schip in een smalle donkere baan van ongeveer een 0,5 mijl breed. Het verschijnsel verdween geleidelijk en was te 19.45 MTG weer geheel verdwenen; gegist bestek: 08 deg 38'Z en 128 deg 07' O. Te 19.55 MTG werd de zee weer licht en werden de volgende waarnemingen gedaan. Temperatuur drogebol: 25 deg C. Temperatuur nattebol: 21.3 deg C. Barometer: 1012.5 mbar. Bewolking: nil. Gegist bestek: 08 deg 37' Z en 128 deg 05' O. Wind: otn, 2 Bft. Temp. Zeewater: 25.8 deg C. S.G. zeewater: 1024. Het verschijnsel hield aan en kon worden waargenomen tot daglicht; het was te 21.05 MTG niet meer waar te nemen. De waarnemingen werden verricht door de 1e stuurman, de 2e sturrmanen de stuurmansleerling." Kapitein Gerus deelde in een latere brief over deze waarneming nog het volgende mede. "Het is een zeer bijzondere gewaarwording in zulk een melkzee te varen; het greef de indruk alsof het schip zich op een sneeuwvlakte voortbeweegt. Bij flink roeren in het opgeslagen zeewater bleken opvallend weinig fosfordeeltjes annwezig te zijn."
Reported In: Tim Wyatt, Unpublished Notes/Paper
Approx Location: Timor Sea
Confidence In Sighting: High Confidence

1.240 South China Sea 1967 F

Observation Start Date: 09/09/1967
Observation Start Hour: 13:15 GMT
Observation End Date: 09/09/1967
Observation End Hour: 13:40 GMT
Approximate Lat: 16 deg 40' N
Approximate Lon: 116 deg 16' E
Observing Ship/Sensor: MV Chefoo (Hong Kong Selected Ship)
Observor(s): Mr. M. J. Butcher, Third Officer
Description: 9th September 1967 between 1315 GMT and 1340 GMT in 16 deg 40'N, 116 deg 16'E, speed 15 knots. Very strong luminescence of the sea throughout this period, colour grey-green. The sky was clear and cloudless with a distinct horizon. This phenomena was seen to cover the whole area surrounding the ship from horizon to horizon. A sample taken from the sea, when stirred contained a very strong luminescence. On leaving area strong luminescence was seen to finish in an almost distinct band 200 to 300 yards wide. Air temperature: 23.5 deg C, wet bulb: 21 deg C, sea temperature: 24 deg C
Reported In: Letter to Dr. Kay
Approx Location: South China Sea
Confidence In Sighting: High Confidence

1.241 South Africa 1967

Observation Start Date: 09/25/1967
Observation Start Hour: (?)
Observation End Date: 09/25/1967
Observation End Hour: (?)
Approximate Lat: 34 deg 37' S
Approximate Lon: 22 deg 07' E
Observing Ship/Sensor: MV Iberic (21528)
Observor(s): Mr.. T. S. Sully, 3rd Officer
Description: Fremantle towards Las Palmas. 25th September 1967 off the South African coast between Mosser Bay and Fish Bay (34 deg 37'S, 22 deg 07'E-21 deg 45' E). Wind SE force 4, sea temperature 59. For approximately 30 minutes the whole sea surface in the area surrounding the vessel ie as far as the eye could sea was lit up by phosphorescence to a remarkable and impressive degree. It was a perfect example of the white water or milky sea described in the Marine Observer's Handbook accentuated by the moderate to rough following sea whose waves glowed and illuminating white and very bright as they broke on the surface. Various shades of blue and green were the predominent colours in the water, very difficult to describe in words but not unlike the green of the still waters penetrating into the depth of the Mediterranean sea in summer. Observed by Mr. T. S. Sully, 3rd Officer.
Reported In: Letter to Dr. Kay
Approx Location: South Africa
Confidence In Sighting: High Confidence

1.242 West Africa 1967

Observation Start Date: 12/23/1967
Observation Start Hour: 20:15 GMT
Observation End Date: 12/23/1967
Observation End Hour: (?)
Approximate Lat: 02 deg 47' N

Approximate Lon: 10 deg 38' W
Observing Ship/Sensor: SS Onoba
Observor(s): M. Klein, Third Officer
Description: Op 23 december 1967 werd in positie 02-47N en 010-38W om 20.15 GMT een viftiental helder lichtende strepen aan beide zijden van het schip in het water waargenomen, die aan bakboord in een richting van 020 gradens - 200 gradens en aan stuurboord ongeveer oost - west liepen. De strepen aan bb. waren helderder dan aan sb. Gestuurd werd 320 r.w. Ze liepen dus ongeveer evenwijdig met de boeggolf. Ze waren ongeveer 300 meter lang, 10 meter breed en met een tussenruimte van ongeveer 30 meter, en begonnen ongeveer op een streek aan bb. en aan sb. Scheen men met een schijnwerper op het water, dan lichttten de zich daaren bevindende deeltjes een ogenblik later even op, terwijl er met behulp van een lamp ook zeer vele sigaarvormige lichamen geien werden, die helemaal niet oplichten en die daarom ten opzichte van het water witachtig leken. Alleen naast en achter het schip lichtten ze op. Het gehele verschijnsel duurde ongeveer een minuut. Geruime tijd daarvoor reeds werden naast en achter het schip dezelfde lcihtgevende sigaarvormige deeltjes waargenomen, die voldeden aan de beschrijving ervan in het uittreksel van "de Zee", nr. 2 van juni 1957. Tien minuted later werd voor het schip over een zeer grote uitgestrektheid een hele melkwitte zee waargenomen, waar we enige ogenblikken later doorheenvoeren en waaren dezelfde lichtgevende deeltjes voorkwamen, doch hoogstwaarschijnlijk ook kleinere. Het gebied was ongeveer 1 mijl breed en 5 mijl lang. hier hebben we zeewater obgeslagen, maar slaagden met onze daarvoor minder geschikte middelen er niet in een van deze langwerpige deeltjes te vangen. Tussen de beide verschijnselen in werden aan beide zijden van het schip zover men met behukp van een lamp kon zien over de gehel zee deze sigaarvormige deeltjes waargenomen, die echter niet oplichtten, als men er op scheen, doch alleen naast en achter het schip oplichtten. Tot +/- 21.15 GMT werden daarna nog dezlfde lichtende deeltjes naast ena chter het schip gezien, waarna ze geleidelijk uit het gezicht verdwenen. De bewolking was een egale stratus-laag, terwijl er nauwelijks wind, zeegang en deining waren. De positie van het schip was in het gebied, dat in Admiralty Chat no. 594 staat aangegeven als "Average Boundary between the Guinsea and Equatorial Currents" Zeewater temperatur 26,5 gradens Droge bol tomp. 26,4 gradens, Natte bol 23,8 gradens Dauepunt 22 gradens Relatieve vochtigheid 80% Barometer 1013,5
Reported In: Tim Wyatt, Unpublished Notes/Paper
Approx Location: West Africa
Confidence In Sighting: Low Confidence

1.243 Oman 1968

Observation Start Date: 02/26/1968
Observation Start Hour: 21:30 GMT
Observation End Date: 02/26/1968
Observation End Hour: 22:00 GMT
Approximate Lat: 20 deg 50' N
Approximate Lon: 59 deg 17' E
Observing Ship/Sensor: MV British Splendour (22474)
Observor(s): (?)
Description: 26th February 1968 between 2130 and 2200 GMT in 20 deg 50'N, 59 deg 17'E. Considerable amount of phosphorescnece observed. The entire sea was affected from forward of the ship to the horizon. Initially appeared as a low fog bank looming up ahead but finally when the ship was surrounded, the normal night time glowing of the sea and sky reversed i.e. the sea appeared as a clear (no cloud sky) milky white in colour and the sky black as on a moonless night. Whole effect very similar to that of heavy ice (light etc) duration approximately 30 minutes followed by normal conditions with possibility of improved visibility.
Reported In: Letter to Dr. Kay
Approx Location: Oman
Confidence In Sighting: High Confidence

1.244 West Africa 1968

Observation Start Date: 07/27/1968
Observation Start Hour: 00:01 UNK
Observation End Date: 07/27/1968
Observation End Hour: (?)
Approximate Lat: 11 deg 44' N
Approximate Lon: 17 deg 46' W
Observing Ship/Sensor: SS Benmacdhui (22786)
Observor(s): Mr. A. Lim, Second Officer, and B. Lee, Third Officer
Description: Captain T. Fyfe, London towards Durban. 27th July 1968 in 11 deg 44'N, 17 deg 46'W, course 175 deg, speed 16.0 knots. Wind SE force 1, slight see and no swell. At 0001 the sea around the ship's course and extending for at least 3 or 4 miles was observed to have a thick milky appearance and although a dark night, upon close examination with the air of an Aldis lamp, the possibility of cause by a film of oil was eliminated. Soundings by electronic device revealed no trace. The sea bottom at the time of observation was approximately 900 fathoms. (Mr. A. Lim, 2nd Officer and B. Lee, 3rd Officer).
Reported In: Letter to Dr. Kay
Approx Location: West Africa
Confidence In Sighting: Very Low Confidence

1.245 Somalia/Socotra 1968 A

Observation Start Date: 08/23/1968
Observation Start Hour: 15:30 GMT
Observation End Date: 08/23/1968
Observation End Hour: 16:30 GMT
Approximate Lat: 17 deg 00' N
Approximate Lon: 58 deg 36' E
Observing Ship/Sensor: MV Registan (22704)
Observor(s): (?)
Description: Durban towards Dubai. 23rd August 1968 between 1530 and 1630 GMT in approximate position 17 deg N, 58.6 deg E, course 014 deg, speed 17.5 knots. Sea surface illuminated and casting off a phosphorescent glow. Low cloud unobservable but stars visible at all times through cloud base.
Reported In: Letter to Dr. Kay
Approx Location: Somalia/Socotra
Confidence In Sighting: High Confidence

1.246 Somalia/Socotra 1968 B

Observation Start Date: 08/26/1968
Observation Start Hour: 16:10 GMT
Observation End Date: 08/26/1968
Observation End Hour: 20:30 GMT
Approximate Lat: 16 deg 45' N
Approximate Lon: 58 deg 20' E
Observing Ship/Sensor: SS Venassa (22643)
Observor(s): (?)
Description: Durban towards Bahrain. 26th August 1968 in 16 deg 45'N, 58 deg 20'E, vessel steering 016 deg at 17 knots, sea temperature 78 deg, air temperature 76 deg. Within a period of 5 minutes at

1610 GMT (2010 at ship) the sea took on a very pronounced milky colour and appeared to glow. At times it was quite impossible to make any horizon except when sky appeared darker than sea. Shining of the Aldis lamp on the surface of the sea failed to increase luminescence. These milky seas cleared at 1720 GMT but returned again at about 1830 until 2030. This effect did not seem to affect the visibility.
Reported In: Letter to Dr. Kay
Approx Location: Somalia/Socotra
Confidence In Sighting: High Confidence

1.247 Java 1969

Observation Start Date: 03/16/1969
Observation Start Hour: 19:20 GMT
Observation End Date: 03/16/1969
Observation End Hour: (?)
Approximate Lat: 7 deg 40' S
Approximate Lon: 103 deg 25' E
Observing Ship/Sensor: MV Strathconon (23208)
Observor(s): I. Stanway, Junior Second Officer, and Mr T. W. Breese, Cadet
Description: 16th March 1969 at 1920 GMT in 7 deg 40'S, 103 deg 25'E, course 057 deg, speed 22 knots. The weather was overcast at the time of observation with continuous light rain when the horizon started to lighten, giving the appearance of the cloud base lifting. However as time proceeded it was apparent that this was not the case and that the light was in face a vast covering of what appeared to be a semi-fluorescent substance on the sea surface. After the initial patch, several more lage streaks of the same phenomenon were observed and at the same time a distinct musty smell was noticed which passed with the eventual dissipation of the surface patches (Messrs I. Stanway, Junior 2nd Officer and M. T. W. Breese, Cadet).
Reported In: Letter to Dr. Kay
Approx Location: Java
Confidence In Sighting: High Confidence

1.248 Azores 1969

Observation Start Date: 11/06/1969
Observation Start Hour: 23:50 GMT
Observation End Date: 11/07/1969
Observation End Hour: 00:15 GMT
Approximate Lat: 39 deg 14.5' N
Approximate Lon: 30 deg 49' W
Observing Ship/Sensor: MV Black Prince (23758)
Observor(s): (?)
Description: (off Flores in the Azores) numerous large patches of phosphorescence were sighted. Most of the large patches appeared in the shape of crescents approximately 100 yards long and 10 yards wide in the largest down to very small patches. The patches were a milky colour with flashes of very bright light from them. A sample of sea water was taken but nothing unusualy could be seen with naked eye. Sea temperature 17.4, air temperature 17.4
Reported In: Letter to Dr Kay
Approx Location: Azores
Confidence In Sighting: Very Low Confidence

1.249 Arabian Sea 1970 A

Observation Start Date: 08/05/1970
Observation Start Hour: 17:00 GMT
Observation End Date: 08/05/1970
Observation End Hour: 19:30 GMT
Approximate Lat: 10 deg 07' N
Approximate Lon: 54 deg 30' E
Observing Ship/Sensor: MV Jawaharlal Nehru
Observor(s): N.J. Kavarana, Captain; H.B. Jolly, First Officer; P.H, Variyava, Third Officer; N.K. Wadegaonker, R/O
Description: The whole area around the ship, as far as the eye could see, was lit up with a white glow. The sea was diffused and milky white in appearance. This area of the sea was calmer, than the other areas. It receded gradually turning darker and darker until the sea regained its normal inky hue. From a distance, it looked like a bright band near the horizon. It etended over a radius of 6 miles around the ship. Dry Bulb Temp. : 26 deg C; Wet Bulb Temp: 23 deg C; Bar reading: 998.0 mb; Wind: SSW, Force 7 Beauforts.
Reported In: Indian Journal of Meteorology and Geophysics 1971, vol. 22 (1); Tim Wyatt Unpublished Notes/Paper
Approx Location: Arabian Sea
Confidence In Sighting: High Confidence

1.250 Namibia 1970 A

Observation Start Date: 08/07/1970
Observation Start Hour: 23:35 GMT
Observation End Date: (?)
Observation End Hour: (?)
Approximate Lat: 24 deg 53' S
Approximate Lon: 10 deg 08' E
Observing Ship/Sensor: SS Esso Hampshire (24936)
Observor(s): Mr K L McCrory, 2nd Officer
Description: wind SW by S 6-7, barometer 1020.9 rising, air temperature 59 deg F, sea temperature 69 deg F. Few clouds, fine and clear. While passing through the above position two large patches of very luminous water were sighted. The patches were approximately 500 ft long and 40 ft wide and were connected by a thin line of luminous water with a total length of about 2 miles. The water appeared to consist of large lumps of a luminous substance.
Reported In: Letter to Dr Kay
Approx Location: Namibia
Confidence In Sighting: Very Low Confidence

1.251 Namibia 1970 B

Observation Start Date: 08/11/1970
Observation Start Hour: 01:30 GMT
Observation End Date: (?)
Observation End Hour: (?)
Approximate Lat: 28 deg 47' S
Approximate Lon: 12 deg 48' E
Observing Ship/Sensor: SS Mangle (24934)
Observor(s): Mr J F Rieldyk, 2nd Officer and P Williams, Quartermaster

Description: Vessel passed through two areas containing waves of phosphorescence giving the sea around a milky appearance. Each wave was approximately one mile long and one yard wide and running in a NW-SE direction. Course of ship 322 degrees, wind south at 7 knots, sea temperature 67 deg F.
Reported In: Letter to Dr Kay
Approx Location: Namibia
Confidence In Sighting: Very Low Confidence

1.252 Socotra 1970

Observation Start Date: 08/12/1970
Observation Start Hour: 20:30 GMT
Observation End Date: 08/13/1970
Observation End Hour: (?)
Approximate Lat: 11 deg 00' N
Approximate Lon: 55 deg 00' E
Observing Ship/Sensor: (?)
Observor(s): E. M. Terburg, Captain; A. Mos, Third Officer
Description: [The account was retrieved as a low quality photocopy with parts of the text entirely illegible. The most complete version of the account that could be retrieved from the photocopy is presented below.] Waarneming van bet verschijnsel "Melkzee." [...] 12 augustus 1970 om 20.30 G.M.T. werd in positie 11-00 N en 55-00 O [...]gedurende twee schtereenvolgende dagen waargenomen. [...]ondergaande maan ongeveer tegen middernacht plaatselijke tijd begon[...] te lichten in die mate dat na een half uur de zee een grote witte[..]ek wearin kim, golfslag noch boeg of helgolf te harkennen viel.[...] koers 25 gradens rw. werd zeegang en deining recht van achteren bevonden.[...] Bft. 7,8. [...]lichten straalden nist er was dus geen sprke van mist de lucht was [...] Temperaturen: droge bol 24,7 natte bol 22,1 [...] luchtdruk 1004,4 Wind ZZW 7 a 8 Zeewater 23,6 in de puts waren[...] te zien, monster van dit water werd bij gebrek aan conserveringsmiddel niet [...] De eerste indruk was die een dikke mist te zijn binnen gevaren dochseen [...] recht achter ons voer op 7 1/2 mijl (radarafstand) bleek noch waarneembaar. [...] G.M.T. scherpe overgang naar normale toestand. Scheiding tussen melkwit en normaal gekleurd zeewater zeer shcerp waarneembaar. Te 22.10 G.M.T. waren de temperaturen zeewater en lucht overandered. Te 22.30 G.M.T. werd het self de verschijnsel opnieuw ontmost ook nu een zeer cherpe scheidingslijn welke verliep volgens lijn WZW-ONO. Sij het sanbreken van de dag 12. aug 1970 te 01.30 G.M.T. verdween de melkzee en was verder niets adnormaals waar te nemen. 13 augustus 1970 in positie 16-00 N 57-40 O engeveer 300 mijl NO van Socotra [...] het naslaan uit de overdrukken van de Zee werd in No 121 een beschrijving gevonden van de[...]rachijnsel welke in grote trekken overeen kwam met vat wij tegenkwamen. [...] werd ook niet gedacht aan het invreizen van een monsterdat dan toch nog moeilijkheden [...]geven met vervoer daar dit schip nooit in Holland komt.
Reported In: Tim Wyatt, Unpublished Notes/Paper
Approx Location: Socotra
Confidence In Sighting: High Confidence

1.253 Arabian Sea 1970 B

Observation Start Date: 08/12/1970
Observation Start Hour: 00:10 GMT
Observation End Date: 08/12/1970
Observation End Hour: 01:00 GMT
Approximate Lat: 18 deg 40' N
Approximate Lon: 58 deg 20' E

Observing Ship/Sensor: Zaria
Observor(s): Unnamed Captain and First and Second Officers
Description: Varende in de Arabische Zee op 12/8-'70 werd het volgende waargenomen: Te +/- 00.10 gispositie 18.40 N 58.20 O, koers 203 rw., vaart +/- 14', leek het of het schip een mistbank naderde, verdere waarneming leerde echter dat het gehele zeeoppervlak een grauwitte kleur had aangenomen, onder een gesloten wolkendek (Cl 6, h 3). Omstreeks halverwge de tijfsduur van het verschijnsel verminerde de intensiteit van de verkleuring om vervolgens weer toe te nemen. Te +/- 01.00 was het verschijnsel vrij abrupt verdwenen, gispositie op dat tijdstip 18.30 N 58.15 O. Aan boord werd aangenomen dat men hiet te maken had gehad met het optreden van de zgn. "melkzee". Meteo waarneminge te 00.50 (alle vermelde tijden in G.M.T.): temp. droge bol 24.7, temp. natte bol 24.0, temp. zeew. 25.1, barometerstand 999.2 mb. Deining 240 gradens, hoogte +/- 3m, periode niet te bepalen. Wind 200 gradens, kracht beaufort 3, icht van 5-10 zeemijl. Verschijnsel waargenomen door gezagvoerder, 1e stman en 2e stman. Op het radarbeeld waren op een afstand van +/- 15', peiling vanuit eigen schip omstreeks 220 gradens, de echo's te zien van 2 schepen op een onderlinge geschatte aftsand van +/- 2'. Visueel werden deze scheppen hiet waargenomen. Wellicht werd door beide, of een van deze schepen net her verschijnsel ook gerapporteerd.
Reported In: Tim Wyatt, Unpublished Notes/Paper
Approx Location: Arabian Sea
Confidence In Sighting: High Confidence

1.254 Indian Ocean 1970

Observation Start Date: 08/22/1970
Observation Start Hour: 18:00 GMT
Observation End Date: 08/22/1970
Observation End Hour: 22:00 GMT
Approximate Lat: 12 deg 54' N
Approximate Lon: 55 deg 42' E
Observing Ship/Sensor: SS Venassa
Observor(s): J. M. Paterson, Second Officer; A. M. Hoare, Third Officer
Description: 22nd August 1970. Whilst reporting the weather for 1800 GMT the sea and swell, which had been running astern of us for most of the voyage, appeared to die down and up ahead the horizon, or what appeared to be the horizon, became most distinct. Then followed the strange phenomenon known as 'luminosity of the sea' of which a good description is to be found in the West Cost of India Pilot (No. 38). The very distinct horizon was emphasized by a white wall of mist, not very high. The foremast light showed no loom so it could hot have reached a height of more than 20 ft. The sea became very milky and the bow wave became very indistinct until the sea appeared as a carpet of white with no definition between the ship's wake and the sea. The luminosity developed until it was very bright and almost took on the appearance of a thick carpet of snow, with almost enough light to read a book by on the wing of the bridge. The first spasm of this phenomenon lasted for almost an hour when it looked as though it would die away, then shortly afterwards it recurred and did not finally die away until 2200. At 1800: Air temp. 24.6 deg C, sea 25.0 deg. Wind NNE, force 2-3. Visibility 7-10 miles. Position of ship at 1800 (approx): 12 deg 54'N, 55 deg 42'E.
Reported In: Mar. Obs. 1971, 07, Vol XLI, no 233
Approx Location: Indian Ocean
Confidence In Sighting: High Confidence

1.255 Gulf of Aden 1970

Observation Start Date: 08/31/1970
Observation Start Hour: 20:00 GMT
Observation End Date: 09/01/1970
Observation End Hour: 00:50 GMT
Approximate Lat: 11 deg 36' N
Approximate Lon: 52 deg 15' E
Observing Ship/Sensor: Zaria
Observor(s): Unnamed Captain and First and Second Officers
Description: Varende in de Golf van Aden op 31/8/1970 werd het volgende waargenomen: Voordat het verschijnsel definitief goed waargenomen werd, vertoonde de zee reeds de hele avond een grauwe en heiige aanblik. De kim was vrij zwak te onderscheiden en soms dacht men met een opkomende mist te maken te hebben. Toch bleek dit niet het geval tezijn, daar het voortoplicht, alsmede het groen boordlicht niet straalden zoals gebruikelijk is bij mist, of sterk verminderd zicht. Te 2300 boordtijd=2000 MTG verdween de nog aanwezige kim vrij plotseling, en werd de zeevoor ongeveer 5/8 wit. Het leek alsof men te doen had met een ijsveld waar doorheengevaren werd. De boeggolf die normaal sterk fluoriseert, was nu echter asgrauw geworden. Na een minuut of 5 begon de kim weer flauw in zicht te komen. Het verschijnsel was goed waartenemen van recht vooruit tot ongeveer 2 streken achterlijker dan dwars zowel aan bakboord en stuurboord. De rest van de zee vertoonde echter een normale aanblik. Onmiddellijk na het waarnemen van bovenstaande verschijnselen werden de volgende meteorologische waarnemingen verricht: Gis: 11 36.0 N 52 15.0 O temperatuur zeewater 22.0 Barometer 1008.0 mb. Wind Z.Z.W. 4/5 Natte bol 20.5 Droge bol 22.0 Nh. 3 Cl 0 Cm naar schatting 3 doch niet met zekerheid te stellen i.v.m. duisternis.Ch. 0 De hemel was voor heet grootste gedeelte van de avond meer dan 4/8 bewolkt geweest, doch ongeveer een half uur voor bovengenoemd vershijnsel brak de bewolking en werd heldere sterrenhemel zichtbaar. Te 20.30 werd de zee aanzienlijk minder wit, totdat te [...] wederom zijn normale aanblik had waargenomen door gezagvoerder.
Reported In: Tim Wyatt, Unpublished Notes/Paper
Approx Location: Gulf of Aden
Confidence In Sighting: High Confidence

1.256 Somalia/Socotra 1970

Observation Start Date: 10/09/1970
Observation Start Hour: 20:05 GMT
Observation End Date: 10/10/1970
Observation End Hour: (?)
Approximate Lat: 10 deg 55' N
Approximate Lon: 54 deg 25' E
Observing Ship/Sensor: MV British Reliance (25482)
Observor(s): Mr M A King, 3rd Officer and Mr A Brown, 2nd Officer
Description: course 033 degrees, speed 14.5 knots. At 2005 the wind which had been SW force 8 dropped rapidly to about force 5 and backed slightly to SSW. Air temperature 75.8, barometer 1009.6. A few minutes later the sea turned milky white as far as the horizon in all directions it was so pale that the ship's wake appeared darker. At about the same time the sea, which had been very heavy, moderated slightly and did not appear to break so much. The sky prior to the phenomenon was completely covered with a semi-transparent autostratus cloud but this cleared rapidly and by 2015 was clear. Visibility was about 6-7 miles (radar range of another vessel). Darker patches of sea were observed lying in a north-easterly direction but in the immediate vicinity of the ship the sea remained white and appeared to increase in intensity. The vessel remained in these conditions until dawn when it was no longer possible to see the luminescence.
Reported In: Letter to Dr Kay

Approx Location: Somalia/Socotra
Confidence In Sighting: High Confidence

1.257 Arabian Sea 1971 A

Observation Start Date: 01/17/1971
Observation Start Hour: 16:45 GMT
Observation End Date: 01/17/1971
Observation End Hour: 18:45 GMT
Approximate Lat: 17 deg 24' N
Approximate Lon: 65 deg 00' E
Observing Ship/Sensor: MV Vishna Kanti
Observor(s): S. D'Mello, Captain; P.H. Varyana, Third Officer
Description: A bioluminescence, extending diametrically upto 2-3 miles, was observed emitting a very bright white glow. This light emitted by it gave the appearance of fog. Within this patch, the surface of the sea was almost glassy. The sea regained its normal colour after the cessation of the phenomenon. Air Temp.: 25 deg C; Wet Bulb: 23 deg C.; Sea Temp.: 24 deg C.; Wind: NE, 06 kt.
Reported In: Indian Journal of Meteorology and Geophysics 1971, vol. 22 (2); Tim Wyatt Unpublished Notes/Paper
Approx Location: Arabian Sea
Confidence In Sighting: High Confidence

1.258 Arabian Sea 1971 B

Observation Start Date: 01/26/1971
Observation Start Hour: 22:20 LOC
Observation End Date: 27/01/1971
Observation End Hour: 04:30 LOC
Approximate Lat: 16 deg 05' N
Approximate Lon: 66 deg 0' E
Observing Ship/Sensor: MV Lord Mount Stephen
Observor(s): Mr D. Rowan, 2nd Officer
Description: The horizon directly ahead of the vessel lightened considerably and within a few minutes a wall of white water appeared to be approaching the vessel. Very soon, the sea was completely white in all directions as far as the eye could see. This continued until 0030 on 27 January and from then on in small patches until 0430. An Aldis lamp was played on the surface but this did not increase luminescence. Course 319 degrees, speed 15 knots, wind N by W force 2
Reported In: Letter to Dr Kay
Approx Location: Arabian Sea
Confidence In Sighting: High Confidence

1.259 Cabo Verde/Senegal 1971

Observation Start Date: 05/19/1971
Observation Start Hour: 23:30 GMT
Observation End Date: (?)
Observation End Hour: (?)
Approximate Lat: 16 deg 16' N
Approximate Lon: 18 deg 11' W
Observing Ship/Sensor: SS Theseus (25650)

Observor(s): Messrs A P Jaggers, Extra 2nd Officer and T McBride Able Seaman
Description: A large streak of white water was seen, rather similar to a long breaker seen at night. The streak stretched about 1/4 mile on each side of the ship lying E-W. For about 15 minutes after the ship had passed through the streak, the wake was clearly visible for about 2 miles astern. No reaction was obtained from shining the Aldis lamp on the streak or the surrounding water and no spots of bio-luminescence were seen all night. A sample was taken as the vessel passed through the streak with the sea-water bucket and it was treated with formalin. A fine and clear night, sea temperature 20 degrees.
Reported In: Letter to Dr Kay
Approx Location: Cabo Verde/Senegal
Confidence In Sighting: Very Low Confidence

1.260 Indian Ocean 1971

Observation Start Date: 07/30/1971
Observation Start Hour: 23:20 LOC
Observation End Date: 07/31/1971
Observation End Hour: (?)
Approximate Lat: 14 deg 20' N
Approximate Lon: 60 deg 52' E
Observing Ship/Sensor: SS Melo
Observor(s): J. Morrison, Captain; A. F. Devanney, Second Officer; Mrs. Devanney; Ship's company
Description: 30th July 1971. At 2320 SMT, on a moonless night during the SW monsoon, the whole sea surface took on a milky appearance, an effect which was found to disappear around the vessel when the deck floodlights were switched on. The phenomenon lasted until first light; throughout that time the white horses were still visible and had a slightly phosphorescent appearance. Nobody on board had ever seen anything like this before, not even the Captain in all his years at sea. As this seemed to be such a rare thing I thought you might be interested to hear about it and have some idea as to what it was, though there was some speculation by my wife that it was to do with plankton and marine life under the sea. Air temp. 24 deg C, sea 25 deg. Pressure 1008.5 mb. Wind SW, force 7-8. Good visibility. Partly Cloudy. Position of ship: 14 deg 20'N, 60 deg 52'E.
Reported In: Mar. Obs. 1972, 07, Vol XLII, no 237
Approx Location: Indian Ocean
Confidence In Sighting: High Confidence

1.261 Socotra 1972 A

Observation Start Date: 01/06/1972
Observation Start Hour: 21:30 LOC
Observation End Date: 01/06/1972
Observation End Hour: 23:25 LOC
Approximate Lat: 15 deg 00' N
Approximate Lon: 56 deg 25' E
Observing Ship/Sensor: PATRO
Observor(s): R. A. de Boer, Third Officer
Description: Varende in de Arabische Zee op 6-1-1972, van Jabel Dhanna naar Triest werd aan boord van de "PATRO" het verschijnsel "Melkzee" waargenomen. het geheel kwan binnen 2 minutes op. De volgende Meteowaarnemingen werden verricht; te 21 uur 40 scheepstijd = 17 uur 40 GMT. Zeewatertemp. 23.2. Droge bol 23.0 Natte bol 18.8 Barometer 1017 millibear. Dauwpunt 17. Rel. Vochtigheid 67%. Wind richting Noord Noord Oost. Windkracht 12 Knots. Alhoewel er windkracht 3-4 heerate leek het ar op alsof het tijdens de waarneming windstil was, tenminste wat het wateroppervlak betrof. Het was

net of er een laagje olie op het water dreef. Voor de waarneming lichtte de zee hevig, mear tijdens de waarnoming was op slochte den klein bectje te sien bij de boeggolf. Wet bewolkte gedeelte van de hemed was in het begin 3/8, (vermoedelijk Cumulus). Deze bewolking nam snel af en te 21 uur 55 was het geheel helder. Het geheel deed denken of er door de sneeuw gevaren werd. Het gaf echter niet het idee, dat vaak voorkomt, van dikke mist wand de kim was zeer duidelijk te zien. Ook waren er nog enige schepen in de buurt en die waren zeer duidelijk te zien. Met deheer Boonstra, derde stuurman van het ms. "DOSINA", ook van "SHELL TANKERS NV" heb ik een gesprek gehad, en het bleek dat hij het zelfde verschijnsel had waargenomen. De "DOSINA" voer 15 mijl aan stuurboord van ons. Bij het schijnen met de Aldislamp op het wateroppervlak lichtte de zee silverachtig op. In het schijnsel van de aldislamp leek het of de lucht vol kleine gegen druppeltjes zat. Bij het roeren in het zeewater bleek dat er maar heel weinin forforriserende deeltjes in het water zaten. Te 21 uur 55 werd het geheel iets minder, maar nam te 22 uur 00 weer in alle hevigheit toe. Te 22 uur 12 scheepstijd werd de volgende waarneming verricht. Zeewatertemp. 23.4 Droge bol. 23.0 Natte bol 18.2 Barometer 1017.1 Dauwpunt 16 Rel Vochtigheid 63% Wind richting en kracht NNO 12 knots. Bewolking onbewolkt. Vanaf 22 uur 20 trok de hemel langzaam dicht totdat om 22 uur 45 het bewolkte gedeelte 5/8 bedroeg. Na 22 uur 25 nam de helderheid van de "melkzee" langzaam af, en zag men de afscheiding als een donkere streep naderbij komen. Te 22 uur 40 was de zee weer normaal. Te 23 uur 10 werd recht vooruit wederom een witte streep waargenomen en te 23 uur 15 bevonden we ons wederom in een "melkzee", Deze duurde tot 23 uur 25. Het geheel was niet zo erg helder i.v.m. de opkomende maan. Na deze "melkzee" was de zee licht golvend: golfhoogte 1/2 meter, periode 4 sec. Deining uit de richting 020 periode 6 sec. hoogte 1 meter. De koers bedroeg 205 snelheid 16 mijl Met de vriendelijke.
Reported In: Tim Wyatt, Unpublished Notes/Paper
Approx Location: Socotra
Confidence In Sighting: High Confidence

1.262 Socotra 1972 B

Observation Start Date: 01/14/1972
Observation Start Hour: 21:00 GMT
Observation End Date: 14/01/1972
Observation End Hour: 21:15 GMT
Approximate Lat: 12 deg 18' N
Approximate Lon: 55 deg 00' E
Observing Ship/Sensor: SS Esso Caledonia
Observor(s): (?)
Description: Course 26 degrees, speed 17 knots. Air temperature 24.5 degrees, wet bulb 21.5 degrees, sea temperature 23.9 degrees,. Wind 065 degrees force 4. No cloud, visibility 15-20 miltes. At 2100 GMT the sea took on a milky white appearance. This phenomenon was visible all round the horizon and as far as the eye could see. The whiteness varied in intensity for 15 minutes, sometimes appearing as if one was in an aeroplance looking down on a cloud and sometimes a dull white. Occasional small patches of bioluminescence appeared close to the ship's side[... rest missing]
Reported In: Letter to Dr Kay
Approx Location: Socotra
Confidence In Sighting: High Confidence

1.263 Somalia 1972

Observation Start Date: 01/31/1972
Observation Start Hour: (?)
Observation End Date: 01/31/1972

Observation End Hour: (?)
Approximate Lat: 0 deg 00' N
Approximate Lon: 54 deg 00' E
Observing Ship/Sensor: (?)
Observor(s): Kazim Albayrak, Captain
Description: [Account was relayed by Muray Albalrak, the son of Capt. Albayrak] My mother saw my father rushing down from the bridge into their cabin, flipping excitedly through various books and asked if something was wrong. My father simply said "look through the porthole." When she peered outside the sea was milky white as far as the eye could see. There was no moon to confuse what they saw. They were sailing in a sea of milk. They took samples from the sea to see if it was a bioluminescence of some sort and if the water in the bucket would also be the same color. It was quite the same ordinary old sea when in the bucket. This situation lasted until the morning and they never experienced it again.
Reported In: Miller et al. 2021
Approx Location: Somalia
Confidence In Sighting: High Confidence

1.264 Cabo Verde/Senegal 1972

Observation Start Date: 03/20/1972
Observation Start Hour: 04:30 GMT
Observation End Date: (?)
Observation End Hour: (?)
Approximate Lat: 12 deg 13' N
Approximate Lon: 17 deg 26' W
Observing Ship/Sensor: MV ADVOCATE (26609)
Observor(s): (?)
Description: Vessel passed through an intense strip of bioluminescence estimated to be 3 miles long and 1 mile wide running in an east-west direction. Whilst in this strip lights of vessels 3 miles away were blotted ou(t?)... Wind north by west 4-5, barometer 1006.7, wet bulb 16.6 degrees, air temperature 17.5 degrees.
Reported In: Letter to Dr Kay
Approx Location: Cabo Verde/Senegal
Confidence In Sighting: Very Low Confidence

1.265 Japan 1973

Observation Start Date: 01/04/1973
Observation Start Hour: 15:00 GMT
Observation End Date: (?)
Observation End Hour: (?)
Approximate Lat: 29 deg 58' N
Approximate Lon: 131 deg 34' E
Observing Ship/Sensor: MV Port Alberni City (28141)
Observor(s): Messrs C R Goddard, 3rd Officer and E Mullin, Navigating Cadet
Description: Course 036 degrees, speed 16 knots. Wind SW force 4, sea temperature 23 degrees. Passed through several large patches of bioluminescent water. The waves appeared to be a luminescent green colour and in addition, two long cigar shaped patches of luminescenct water, each extending for approximately one mile and parallel to each other were observed. These patches were particularly brilliant and could be seen as a glow on the horizon from several miles away and having the same effect as seeing the glow of a large town on the horizon.

Reported In: Letter to Dr Kay
Approx Location: Japan
Confidence In Sighting: Very Low Confidence

1.266 Namibia 1973

Observation Start Date: 03/08/1973
Observation Start Hour: 21:00 GMT
Observation End Date: 03/08/1973
Observation End Hour: 22:20 GMT
Approximate Lat: 27 deg 20' S
Approximate Lon: 11 deg 42' E
Observing Ship/Sensor: MV Donegal (28574)
Observor(s): Mr B J Wright, 3rd Officer
Description: On course 322 degrees at 15.3 knots. We saw the first of several unusual patches of bioluminescence. Initially seen at a distance of about 2 miles they had the appearance of small mist patches. When we passed close to the largest of these patches it was approximately 20 feet in diameter, a bright milky white colour with a glow or mist effect to about 12 inches above the surface. With the use of an Aldis lamp and binoculars thousands of tiny red lights could be seen within the patch (not sidelight reflection since this was passed on the starboard side). Last observation at 2220 GMT. Wind SE 20 knots, sea temperature 17.4 degrees.
Reported In: Letter to Dr Kay
Approx Location: Namibia
Confidence In Sighting: Very Low Confidence

1.267 Ecuador 1973

Observation Start Date: 03/26/1973
Observation Start Hour: 05:00 GMT
Observation End Date: 26/93/1973
Observation End Hour: 09:00 GMT
Approximate Lat: 00 deg 12' S
Approximate Lon: 84 deg 54' W
Observing Ship/Sensor: MV Piako (27990)
Observor(s): Captain Lambrick, Mr S C Formstone, 3rd Officer, Mrs Formstone his wife and Mr N Blaize, Efficient Deckhand
Description: No wind, sea calm, swell indeterminate, sea temperature 24.0 degrees. During the pm 8-12 watch, intense phosphorescence was observed lighting ship and surrounding area. Certain particles were much brighter than others and stood out quite remarkably. When the beam of the Aldis lamp was shone on these particles they changed colour to red as though being shone into the eye of a fish. The phosphorescence lasted until moonrise. A water sample was taken and has been forwarded. [No Sampled has been received].
Reported In: Letter to Dr Kay
Approx Location: Ecuador
Confidence In Sighting: High Confidence

1.268 India 1973

Observation Start Date: 11/26/1973
Observation Start Hour: 21:40 LOC

Observation End Date: 11/26/1973
Observation End Hour: (?)
Approximate Lat: 17 deg 28' N
Approximate Lon: 70 deg 34' E
Observing Ship/Sensor: SS Schelpwijk
Observor(s): (?)
Description: [This account are notes written in a deck log and were marked by Tim Wyatt in various ways, in particular the word melkzee was underlined.] Te 2140 tyd a/b. (MTG = 16,30 t/m 16.41) [...] melkzee [...] 27.4C lucht 27.0 C Droge bol 27C natte bol. 23.2C N.O. 2/3 Helsoge[...] licht = +/- 15 mijl Pos: 17 28N - 70 34O Koers: 304 [...]
Reported In: Tim Wyatt, Unpublished Notes/Paper
Approx Location: India
Confidence In Sighting: High Confidence

1.269 Bay of Bengal 1973

Observation Start Date: 12/28/1973
Observation Start Hour: 16:30 GMT
Observation End Date: 12/28/1973
Observation End Hour: 18:30 GMT
Approximate Lat: 14 deg 11' N
Approximate Lon: 84 deg 59' E
Observing Ship/Sensor: MT Desh Bandhu
Observor(s): M.K. Nambiar, Captian; K.R. Keswani, Chief Officer; S.K. Gulati, Second Officer
Description: On passage from Haldia to Al Fao and between DR position Lat. 14 deg 24.0' N Long. 85 deg 03' E, and Lat. 13 deg 58' N, Long 84 deg 54' E in the Bay on Bengal the following was observed. The sea within 2 miles radius around the ship would suddenly appear to be glossy and the colour of the sea in the dark of the night would appear to be whitish. The visibility during the duration of the phenomena would appear to deteriorate to about 6 to 8 iles giving rise to a hazy horizon. At a stretch, this phenomena was observed to last for about 40 minutes and then everything was once again normal for 20 minutes or so when the phenomena would appear again. Weather: Wind NNE, Force 4 kt; Swell NNE, height 2m; Sky: Find, a bright starry night; Bar; Constant at 1014.1 mb (uncorrected); Visibility: fluctuating between 6 to 12 miles; Temp.: Dry Bulb 26 deg C and Sea Temp: 26 deg C.
Reported In: Tim Wyatt, Unpublished Notes/Paper
Approx Location: Bay of Bengal
Confidence In Sighting: High Confidence

1.270 Somalia/Socotra 1974 A

Observation Start Date: 08/10/1974
Observation Start Hour: 16:00 GMT
Observation End Date: 08/10/1974
Observation End Hour: (?)
Approximate Lat: 15 deg 15' N
Approximate Lon: 59 deg 15' E
Observing Ship/Sensor: SS Esso Pembrokeshire (30336)
Observor(s): M. Dickers, First Officer
Description: 10 August 1974 at 1600 GMT in 15 deg 15'N 59 deg 15'E. Wind SW Force 7; heavy swell, rough sea, observed whole sea area through 360 deg of horizon to be glowing white with luminescence. Air temperature 25 deg C and sea temperature 26 deg C.

Reported In: Letter to Dr. herring
Approx Location: Somalia/Socotra
Confidence In Sighting: High Confidence

1.271 Oman 1974

Observation Start Date: 08/11/1974
Observation Start Hour: (?)
Observation End Date: 08/12/1974
Observation End Hour: (?)
Approximate Lat: 19 deg 42' N
Approximate Lon: 59 deg 00' E
Observing Ship/Sensor: MS Neder Waal
Observor(s): (?)
Description: [This account is made up of a note written in a deck log and were marked by Tim Wyatt with the words 'witte melkzee' underlined.] Op +/- 19 42 N 59 00 O vanaf 18.15-20.15 "witte melkzee" waargenomen. Te 18.45 droge bol 24.3 C natte bol 23.8 C dauwp: 23C. [...] 97 gradens wind: ZZO 3-2 deining Z matig hoog per 7 sec Hemel wazig. koers 207 gradens.
Reported In: Tim Wyatt, Unpublished Notes/Paper
Approx Location: Oman
Confidence In Sighting: High Confidence

1.272 Somalia/Socotra 1974 B

Observation Start Date: 08/21/1974
Observation Start Hour: 17:00 GMT
Observation End Date: 08/21/1974
Observation End Hour: 17:45 GMT
Approximate Lat: 11 deg 30' N
Approximate Lon: 55 deg 40' E
Observing Ship/Sensor: MV British Commodore (30205)
Observor(s): N. McCleod, Master
Description: On passage from Gothenburg towards Das Island. 21 August 1974 1700 GMT in 11 deg 30'N 55 deg 40'E. Bioluminescence was observed forming from the north. After 20 minutes it attained its greatest degree of luminescence. The sea temperature at this time was 23C. The luminescence continued for 45 minutes until 1745 at which time the ship passed through a very well defined border between luminescence and clear water. The luminescence extended as far as the eye could see and was of a white milky colour with a greenish tinge. No change was observed on shining an Aldis lamp on the surface however this did indicate a good deal of red tinted dust particles in the atmosphere which had previously existed but without the red hue.
Reported In: Letter to Dr. Herring
Approx Location: Somalia/Socotra
Confidence In Sighting: High Confidence

1.273 Arabian Sea 1974

Observation Start Date: 08/31/1974
Observation Start Hour: 23:20 UNK
Observation End Date: 08/31/1974
Observation End Hour: 23:40 UNK

Approximate Lat: 11 deg 10' N
Approximate Lon: 55 deg 30' E
Observing Ship/Sensor: MV Turkistan
Observor(s): G. A. Bridge, Third Officer; D. F. Gates, Second Officer
Description: 31st August. At 2320 the vessel entered an area in which the sea appeared to be lit by subdued under-sea lighting, causing it to glow an opaque grey-green colour. The wind was SSW, force 4 at the time, causing the sea to break, apart from which the surface appeared rather dead as if covered by ice-rind. The lighted areas stretched from horizon to horizon without any discontinuity. Normal bright speckles of marine bioluminescence continued to appear in the water disturbed by the ship's movement. Prior to arriving in the area, an indication of its existence was given by a haze over the horizon like an aurora. This became gradually brighter as we reached the area, the water changing from a glowing silver-green colour to grey-green as we entered. There was at the time a noticeable salty smell in the air. At 2340 the vessel cleared the area. Sea temp. 24.1 deg C. Position of the ship at 2320: 11 deg 10'N, 55 deg 30'E.
Reported In: Mar. Obs. 1974, 07, Vol XLIV, no 245
Approx Location: Arabian Sea
Confidence In Sighting: High Confidence

1.274 Java 1974

Observation Start Date: 10/18/1974
Observation Start Hour: 13:00 GMT
Observation End Date: 10/18/1974
Observation End Hour: (?)
Approximate Lat: 7 deg 36' S
Approximate Lon: 120 deg 56' E
Observing Ship/Sensor: MV Erawan (30294)
Observor(s): (?)
Description: On passage from Noumea towards Port Kelang. 18 October 1974 at 1300 GMT in 7 deg 36'S 120 deg 56'E. Marine bioluminescence observed, upon inspection with Aldis lamp no reaction when directly lighted. However, with angled light shows diffused greenish matter, without the air of Aldis lamp, eerie white-greenish glow is more concentrated near ship's side.
Reported In: Letter to Dr. Herring
Approx Location: Java
Confidence In Sighting: High Confidence

1.275 India 1975

Observation Start Date: 11/11/1975
Observation Start Hour: 22:30 GMT
Observation End Date: 11/11/1975
Observation End Hour: 23:30 GMT
Approximate Lat: 07 deg 01' N
Approximate Lon: 78 deg 27' E
Observing Ship/Sensor: MS Daphne
Observor(s): J. F. Casimiri, Second Officer
Description: Op 11 november 1975 begon om ongeveer 22.30 uur GMT de zee heel flaue op te lichten. Te 22.40 uur werd het vermoeden dat dit het vershijnsel melkzee betrof, bevestigd toen de zee een diffuus wit schijnsel verspreidde. Hoewel het leek of het zicht minder werd, moest dit aan de witte schijn van het water geweten worden, ondat andere schepen gewoon op ongeveer 14 á 15 mijl in zicht kwamen.

Bewolking was op het ogenblik van de waarnemingen niet op soort te onderscheide wel was te constateren dat de lucht helemaal bedekt was met een gelijkmatige soort bewolking waar de sterren nog doorheen kwamen. Enkele gegevens: temp. natte bol 24.1; temp. droge bol 25.7; zeewatertemp 26.4; wind 300 graden; 9 zm / uur (Bf 3); Koers 300 r.w. vrt 13.5 ooghoogte 22 m. barometer 1010.1 positie te 23.00 GMT: 07-01.0 N 78-27.0 E zeediepte volgens kaart groter dan 1100 vdm. Terwijl het verschijnsel heel zwak begon, hield het om 23.30 uur abrupt op, althans verlieten we het gebied. Dit wad duidelijk te zien. Er was een scherpe grens, enigszins gegolfd, met als hoofdrichting van 070-250 graden. P.s. Er werd geen monster van het water genomen, aangezien daartoe de middelen ontbraken.
Reported In: Tim Wyatt, Unpublished Notes/Paper
Approx Location: India
Confidence In Sighting: High Confidence

1.276 Somalia 1976 A

Observation Start Date: 01/06/1976
Observation Start Hour: (?)
Observation End Date: 01/06/1976
Observation End Hour: (?)
Approximate Lat: 6 deg 48' N
Approximate Lon: 52 deg 20' E
Observing Ship/Sensor: Texaco Bombay
Observor(s): D. Saunders, Master
Description: EN ROUTE FROM BANDAR MASHUR TO DURBAN. GENERAL LOCATION ARABIAN SEA. VESSEL ENTERED "MILKY" SEA AT APPROX. D.R. POS'N LAT. 06 48' LONG. 52 20' LEFT "MILKY" SEA AT APPROX. D.R. POS'N. LAT. 06 20' LONG. 52 07'. WEATHER CONDITIONS AT TIME OF OBSERVATION. SKY CLEAR OF CLOUD. BAROMETER 30.04 ins.HG. AIR TEMPERATURE. 76 F. SHIP'S COURSE 202 (T) SHIP'S SPEED 14.5 Kns. SAMPLE OF SEA SURFACE TAKEN PLEASE ADVISE WHERE AND HOW BEST TO FORWARD IT TO YOU (V/L TRADING MIDDLE/FAR EAST PORTS.) BRIEF. DESCRIPTION. FIRST NOTICED A MARKED CONTRAST BETWEEN THE BLACKNESS OF THE SHIP AND THE SURROUNDING SEA. IT WAS THEN LIKE PASSING OVER AN ICE RINK OR PERHAPS FLOATING ON A CLOUD. IT WAS A VERY WEIRD EXPERIENCE. IF IT WERE NOT FOR THE VARIATION OF THE SHIP IT WOULD HAVE BEEN LIKE A GHOSTLY PASSAGE. THE HORIZON WAS CLEAR CUT AND THE WHITENESS OF THE SEA WAS SHOWN MORE BY THE DARK SKY. ON PASSING CLEAR OF THIS PHENOMENON, THE SKY AND SEA MERGED TO FORM A SOLID BLACK WALL WHICH SEEMED TO BRING OUT EVEN MORE, THE AMAZING ICE-LIKE SEA PREVIOUSLY. "MILKY SEA", AS THE MARINER'S HANDBOOK DESCRIBES IT, IS EXACTLY WHAT IT IS LIKE. A NEVER TO BE FORGOTTEN EXPERIENCE.
Reported In: Letter to Dr. Herring
Approx Location: Somalia
Confidence In Sighting: High Confidence

1.277 Somalia 1976 B

Observation Start Date: 01/11/1976
Observation Start Hour: 23:42 GMT
Observation End Date: 01/12/1976
Observation End Hour: 00:37 GMT
Approximate Lat: 6 deg 00' N
Approximate Lon: 52 deg 00' E

Observing Ship/Sensor: MV Sugar Importer (32037)
Observor(s): G. P. Ansell, Second Officer; B. Tank, Able Seaman
Description: On Passage from Durban towards Persian Gulf. Observed 11-12 January 1976. Approximate positon 6 deg N 52 deg E. As the vessel approached the area of "milky sea" the brightness increased dramatically. When the vessel entered the "milky sea" at 2342 its extent was observed to be from horizon to horizon and when the vessel was about halfway across no clear water was visible at all, the "milky sea" still extended around the horizon. The colour of the sea can best be described as "pale banana" (i.e. the colour of the fruit and not that of the outer skin). No individual luminous organisms were osberved, and the shining of the Aldis lamp on the surface, the turning on and off the radar, and echo sounder had no effect on the brightness of the luminescence, which had by this time come bright enough to make the stars distinguishable only with the greatest difficulty, and to make it quite easy to read without the aid of artificial light. At 0005 a water sample was obtained and treated with formalin, but the time elapsed before handing over the sample for analysis and the fact that no information regarding the amount of formalin to be used was available, may have caused the sample to deteriorate somewhat. (Information regarding the use and proportions of the various preservatives available would be most welcome.) At 0037 the vessel crossed the northern edge of the "milky sea" and it was observed that the edge was clearly defined and did not fade gradually as it was approached. This was also seen to be the case upon the vessel entering the patch. as the vessel proceeded away from the patch it was again observed that the clouds were luminated by the water. Weather at midnight wind NNE 15 knots temp 25.2C, sea temp 26.2C, barometer 1012.1 mb.
Reported In: Letter to Dr. Herring
Approx Location: Somalia
Confidence In Sighting: High Confidence

1.278 Somalia 1976 C

Observation Start Date: 01/11/1976
Observation Start Hour: 22:00 GMT
Observation End Date: 01/12/1976
Observation End Hour: 01:45 GMT
Approximate Lat: 1 deg 30' N
Approximate Lon: 49 deg 15' E
Observing Ship/Sensor: SS Esso Caledonia (31779)
Observor(s): J.W.H. Aalen, Chief Officer; C. G. Starr, Second Officer
Description: Kharg Island towards Milford Haven. Between the hours of 2200 GMT 11 January and 0145 12 January 1976. The phenomena known as 'milky sea' was observed, the entire surface of the sea seemingly from horizon to horizon took on a green/white milky appearance and gave the impression of being lit from below. The wind at the time was NE force 4. With a cloudless sky, with the exception of an occasional patch of cumulonimbus at a height of 1000-1500 feet. The moon had set approx one hour before the phenomena started, during this time it was not possible to see the wave tops or bow wave. At 0130 GMT the effect decreased rapidly and only the immediate area around the ship was affected and at 0145 GMT, about 45 minutes before dawn the luminescence disappeared completely and the bow wave and wave crests could now be seen clearly. This same phenomena was also observed between the hours of 2000-2300 GMT 10 January when in positon 6.0 deg N 51 deg 30' E by Mr. Starr. Weather conditions 0100 11 January, temp 25 deg C, sea temperature 25 deg C, barometer 1012.4 wind NE force 4.
Reported In: Letter to Dr. Herring
Approx Location: Somalia
Confidence In Sighting: High Confidence

1.279 Somalia 1976 D

Observation Start Date: 01/23/1976
Observation Start Hour: 17:00 GMT
Observation End Date: 01/23/1976
Observation End Hour: 21:00 GMT
Approximate Lat: 05 deg 10' N
Approximate Lon: 51 deg 00' E
Observing Ship/Sensor: SS London Pride (Canadian Selected Ship)
Observor(s): K.J. Halpin, Third Officer
Description: Persian Gulf to Europort. 23 January, 1976. Between 1700 and 2100 GMT, a "white water" phenomena oberved, where the sea all around the ship, stretching to the horizon, was illuminated by a 'milky' greenish/white light. This "blanket" of light appeared to be a few feet above the actual sea surface and seemed to have a calming effect on the surface of the water, although the wind speed and direction did not alter considerably. This "blanket" of light was unbroken and nowhere in it was observed any individual patches of bright green bioluminescence normally associated with the phenomena of "phosphorescence". The effect of this phenomena was totally negated by the rising of the moon shortly after 2100 G.M.T. Air temp. 25.0 deg C, wet bulb 24.0 deg C, sea temp 27.0 deg C, wind EXN force 4, sea slight. Positon of ship: 05 deg 10'N, 51 deg 00'E.
Reported In: Letter to Dr. Herring
Approx Location: Somalia
Confidence In Sighting: High Confidence

1.280 Somalia 1976 E

Observation Start Date: 01/25/1976
Observation Start Hour: (?)
Observation End Date: 01/25/1976
Observation End Hour: (?)
Approximate Lat: 4 deg 13' N
Approximate Lon: 51 deg 27' E
Observing Ship/Sensor: Texaco Bombay
Observor(s): D. Saunders, Master
Description: 25 January 1976. Below are listed the meteorological conditions present when once again an extensive area of bioluminescence was observed. It took the form of the "Milky Sea" described in the Mariner's Handbook and was more prominent than the one reported to you by us of the 6th January 1976. If a description is desired it appeared to be like an ice rink and lasted some considerably time. The sky was a sharp contrast to the whiteness of the sea. Vessel entered area of bioluminescence in 4 deg 13'N 51 deg 27'E. Left 5 deg 14'N 52 deg 10'E, Sea Temp 79 deg F, air temp 78 deg F, Cloud 3/8 cover, Wind NNE force 3, Course 025 (T), Speed 13 knots. A sample of the sea water was obtained and is being forwarded to the department we hope that the information will be of some help to you and look forward to hearing of any progress being made in the pursuit of understanding this phenomenon.
Reported In: Letter to Dr. Herring
Approx Location: Somalia
Confidence In Sighting: High Confidence

1.281 Somalia 1976 F

Observation Start Date: 01/30/1976
Observation Start Hour: (?)
Observation End Date: 01/31/1976

Observation End Hour: (?)
Approximate Lat: 04 deg 00' N
Approximate Lon: 50 deg 36' E
Observing Ship/Sensor: SS Chevron Kentucky
Observor(s): (?)
Description: [This account are notes written in a deck log and were marked by Tim Wyaat in various ways, in particular the word melkzee was underlined on both January 30th and January 31st.] [The January 30th account] [...] 04-00N / 50-36E "melkzee" waargenomen [...] droge bol 25.2 natte bol 23.0 water temp 26.0 wind[...]15' [...] 207 gradens [...] 20.00 GMT [The January 31st account] [...] "melkzee" waargenomen [...] 1700-1900 GMT
Reported In: Tim Wyatt, Unpublished Notes/Paper
Approx Location: Somalia
Confidence In Sighting: High Confidence

1.282 West Africa 1976

Observation Start Date: 04/26/1976
Observation Start Hour: 02:00 GMT
Observation End Date: 04/26/1976
Observation End Hour: (?)
Approximate Lat: 13 deg 14' N
Approximate Lon: 17 deg 37' W
Observing Ship/Sensor: MV Sherbro (32129)
Observor(s): K. Hardy, Second Officer
Description: 26 April 1976 in position 13 deg 14'N 17 deg 37'W at 0200 GMT. Brilliant green luminescence observed in water. Visibility approximately 4 miles. The phenomena was visible for about 2 miles from ship. At times it was so intense that the sky had a green glow to it. It lasted for about 20 minutes. Just before passing out of the area it could be seen running in bands across the water in an east-west direction. Air temperature 21 deg C, sea temperature 21 deg C, Wind NxW 3, sky clear, no moon.
Reported In: Letter to Dr. Herring
Approx Location: West Africa
Confidence In Sighting: Low Confidence

1.283 Somalia 1976 G

Observation Start Date: 07/13/1976
Observation Start Hour: 15:30 GMT
Observation End Date: 07/13/1976
Observation End Hour: 18:00 GMT
Approximate Lat: 11 deg 11' N
Approximate Lon: 54 deg 23' E
Observing Ship/Sensor: SS Tantalus (32320)
Observor(s): M.V. Hobbs, Third Officer; A.L. Walker, Junior Third Officer
Description: 13 July at 1530Z in position 11 deg 11'N 54 deg 23'E. Observed bioluminescence in the form of "Milky Sea" all around the vessel and extending to the horizon as twilight faded. The moon had not yet risen and the sky was covered by a thin layer of cirrostratus. Wind SSW 6, moderate swell, air temp 25 deg C, sea temp 23.6C. All signs of the rough sea were hidden from sight as the rough glow from the bioluminescence made the surface look white and flat to the observer. The only effect apparent when the Aldis light was aimed at the was to shine through the glow and expose the rough sea. It was

noted that the sea temperature had dropped 2 1/2 deg C near the time of this observation and that it did not rise again until after all signs of bioluminescence had disappeared at 1800 GMT.
Reported In: Letter to Dr. Herring
Approx Location: Somalia
Confidence In Sighting: High Confidence

1.284 Java 1976

Observation Start Date: 07/17/1976
Observation Start Hour: 12:20 GMT
Observation End Date: 07/17/1976
Observation End Hour: (?)
Approximate Lat: 10 deg 40' S
Approximate Lon: 109 deg 06' E
Observing Ship/Sensor: MV Agamemnon (32361)
Observor(s): A. Sharon, extra Second Officer
Description: 17th July 1976 Discolouration of Sea (Evening) (Zone Time GMT+7 hrs) (Dubarn - Kobe via Lombok Strait). 1220 GMT Ships Pos'n 10 deg 40'(S) 109 deg 06'(E). V/L entered area of 'Milky-White' sea. Marked line of demarkation NNE/SSW. Sea temp 25 deg C. Air temp (wet) 22.5 deg C (dry) 24.5 deg C. Negative response to artificial light. Complete uniform whitish appearance horizon to horizon. (NOT PATCHY). Sample of water taken and apparently clear. Ships Pos'n had been fixed by stellar observation at 1054 GMT speed 13.5 knots course 076 deg T. Set and drift experience from AM. Stars Pos'n (12 HRS EARLIER) was 312 deg X 5'. Wind ExS 3. Echo sounder and Radar's running (6'x48' range). No sounding or targets registered. 1520 G.M.T. Ships Pos'n 10 deg 31'(S) 109 deg 43'(E) V/L runs clear of discoloured water. Line of demarkation WNW/ESE. Wind ExN2. Moonrise was 12 minutes later at 1532 GMT. Milky white area estimated at 40.5 miles diameter. The only reference, at hand, on this startling phenomena was found in the Eastern Archipelago Pilot Vol. II. Page's 46/47 (now deleted by supplement) when the 'Helen Stuart' ran through a similar patch of 50 miles in 1845. Although her exact pos'n was not given the area recorded was only some 250 miles SSW of our known area. It is also worth mentioning that several days prior to this sighting an earthquake was experience on Bali Island 330' Away. Seawater sample follows.
Reported In: Letter to Dr. Herring
Approx Location: Java
Confidence In Sighting: High Confidence

1.285 Somalia/Socotra 1976 A

Observation Start Date: 07/19/1976
Observation Start Hour: (?)
Observation End Date: 07/19/1976
Observation End Hour: (?)
Approximate Lat: 11 deg 33' N
Approximate Lon: 51 deg 49' E
Observing Ship/Sensor: MV Westmorland (32689)
Observor(s): P. W. Price, Captain; N. D. Graham, Third Officer
Description: 19 July 1976 in position 11 deg 33'N 51 deg 49'E. Course Southeast at 15 knots. Vessel entered large area of bioluminescence. No boundaries visible on the horizon. During the passage of this area, the sea (and the sky at the horizon) glared a brilliant and bright green. So brilliant in fact that neither white caps nor swell waves could be distinguished from what appeared to be a perfectly flat sea. Vessel left area approximately one hour later in position 11 deg 24'N 52 deg 01'E. Weather: wind SW

force 7/8, air temp 25 deg C, sea temp 29.8 deg C.
Reported In: Letter to Dr. herring
Approx Location: Somalia/Socotra
Confidence In Sighting: High Confidence

1.286 Somalia 1976 H

Observation Start Date: 07/22/1976
Observation Start Hour: 22:00 GMT
Observation End Date: 07/22/1976
Observation End Hour: (?)
Approximate Lat: 09 deg 18' N
Approximate Lon: 55 deg 30' E
Observing Ship/Sensor: Laomedon
Observor(s): W.R.C. Bubler, Second Officer, Hermansjah, Sailor
Description: Arabian Sea - Sea surface phenomenon, Pos'n 09 deg 18'N 55 deg 30'E 2200 G.M.T. 0200 S.M.T. 22nd July. The sea as far as could be seen became brilliant white, the bow wave and broken water appeared black i.e. negative. The whiteness of the surface was hurtful to an observers eyes, with stars to be seen the effect was startling. The barometer remained steady. This phenomenon lasted 45 minutes approximately, barometer 1010.8 <corrected> wet bulb 23.2 deg C dry bulb 24.1 deg C sea temperature 22.1. Sea sample taken. Upon moonrise the effect ended abruptly. Wind 190 deg T 18-25 knots.
Reported In: Letter to Dr. Herring
Approx Location: Somalia
Confidence In Sighting: High Confidence

1.287 Somalia 1976 I

Observation Start Date: 07/22/1976
Observation Start Hour: 16:20 GMT
Observation End Date: 07/23/1976
Observation End Hour: 00:45 GMT
Approximate Lat: 09 deg 00' N
Approximate Lon: 57 deg 30' E
Observing Ship/Sensor: SS Benlomono (32372)
Observor(s): (?)
Description: July 22nd Posn Lat 08 deg 54'N Long 59 deg 06'E Co 281 deg (T) Spd 13.24 kts S.W. Monsoon. Sea Temp 26.1 deg C. Air Temp 26.3 deg/24.5 deg Dew Point 23 deg C. Baro:1010.9 Swell 25717 Wind WSWx6. At approx 1620Z V/L entered an area of sea which had the resemblance of sea fog, creamy white colour. This was observed to stretch all around the horizon as far as the eye could see. The horizon ahead was completely obscured and it appeared as if the sea was lighting up the sky, the ships radar was switched on, as precaution, as nothing visible. Ahead although vis around was in excess of 6mls it was also noted that the air became very dry. One could feel this when taking a deep breath, one of the ship's engineers commented that he found it quite hard to breath. At approx 1820Z the intensity of the white sea began to fall rapidly, at 1900Z vessel clear of white sea with no apparent change in weather or temps. V/L again passed through another area of "white sea" between 2330Z on 22nd and 0045Z on 23rd. Posn Lat 09 deg 00'N 57 deg 30'E.
Reported In: Letter to Dr. Herring
Approx Location: Somalia
Confidence In Sighting: High Confidence

1.288 Somalia/Socotra 1976 B

Observation Start Date: 07/25/1976
Observation Start Hour: 15:30 GMT
Observation End Date: 07/25/1976
Observation End Hour: 20:30 GMT
Approximate Lat: 11 deg 25' N
Approximate Lon: 55 deg 15' E
Observing Ship/Sensor: Tantalus (33876)
Observor(s): Third Officer
Description: July 25th 1530-2030Z DR Position 11 deg 25'N 55 deg 15'E -- 10 deg 52'N 54 deg 56'E Course 208 deg (T). Average speed 7.73 knots. During this period we observed an example of total bioluminescence covering the sea up to the visible horizon, which provided a hazy dividing line between the white sea and the clear dark sky. The sea was a milky white in colour and could therefore be described as "milky sea" bioluminescence. It was observed, using an aldis lamp, that the air directly above the sea contained a fine mist. We took a water sample and obtained a temperature the water was colourless and showed no visible signs of life forms. A constant weather watch was maintained throughout the period. 1530Z Wind SSW6 swell SWxS - moderate. Dry Bulb 24 deg C wet bulb 22.5 deg C, 1006.9 mb, Sea temp 21 deg C. 1630Z wind SSW6, swell SWxS - moderate dry bulb 24.2 deg C wet bulb 22.6 deg C, 1007.6 mb, sea temp 23 deg C. 1730Z wind SSW6, swell SWxS - moderate. Dry bulb 24.3 deg C wet bulb 22.6 deg C 1007.e mb sea temp 23.1 deg C. 1830Z wind SSW6 swell SWxS - mod/heavy dry bulb 24.0 deg C wet bulb 22.5 deg C, 1007.2 mb sea temp 22.2 deg C. 1930Z wind SSW6/7 swell SWxS - heavy dry bulb 23.9 deg C wet bulb 22.6 deg C 1007.0 mb sea temp 22.0 deg C. 1930Z SEA showed signs of darkening in patches especially on E. horizon breaking waves now showing up brilliant white. 2030Z wind SSW7 swell SWxS - heavy dry bulb 23.9 deg C wet bulb 22.6 deg C 1006.8 mb sea temp 21.8 dg C. 2030Z Milky sea ended gradually only luminescence now in bow wave. There was no definite dividing line between normal and white sea. The bioluminescence, over a period of 30-40 minutes, just faded away. It appeared to retreat towards the western horizon from a moon-lit eastern horizon. There was one other ship in our area that was G.D.R. vessel "Frieden" on a WSW course bound for Port Kelang from Antwerp via Suez Canal. We sighted her at 1830 and she first encountered the milky sea @ 1630. Throughout this period of time only a trace of cirrus cloud was to be seen in the sky.
Reported In: Letter to Dr. Herring
Approx Location: Somalia/Socotra
Confidence In Sighting: High Confidence

1.289 Somalia 1976 J

Observation Start Date: 07/25/1976
Observation Start Hour: 00:00 GMT
Observation End Date: 07/25/1976
Observation End Hour: 01:30 GMT
Approximate Lat: 5 deg 24' N
Approximate Lon: 52 deg 36' E
Observing Ship/Sensor: MV Mahronda (32553)
Observor(s): B. Argent, Second Officer
Description: 25 July 1976, 00-0130 GMT in position 5 deg 24'N 52 deg 36'E. A luminescent glow was observed, the sea from horizon to horizon glowed a pale green. There was no concentrated luminescence in the ship's wake. The whole gave one the impression of being in the middle of a snow field.
Reported In: Letter to Dr. Herring

Approx Location: Somalia
Confidence In Sighting: High Confidence

1.290 Socotra 1976

Observation Start Date: 07/26/1976
Observation Start Hour: 16:00 GMT
Observation End Date: 07/28/1976
Observation End Hour: 20:30 GMT
Approximate Lat: 12 deg 12' N
Approximate Lon: 55 deg 38' E
Observing Ship/Sensor: State of Gujarat
Observor(s): C. Gopalkrishnan, Chief Officer
Description: The colour of the sea turned milky white within half an hour as if the whole sea was lit with mercury lights. There was no change in atmospheric pressure and sea temperature. And sea water examination showed no precipitation. This phenomena occurred after rough weather for six days and lasted till the next morning. The same phenomena was repeated on 28 July 1976 for one hour, (1930 to 2030 hr.) Weather: Wind SW'ly force 7/8, clear sky. Pressure: 1007.4 mb; Air Temp: 24.5 deg C; Wet Bulb: 23 deg C, Sea Temp: 29 deg C.
Reported In: Tim Wyatt, Unpublished Notes/Paper
Approx Location: Socotra
Confidence In Sighting: High Confidence

1.291 Somalia 1976 K

Observation Start Date: 07/28/1976
Observation Start Hour: 02:20 GMT
Observation End Date: 07/28/1976
Observation End Hour: (?)
Approximate Lat: 03 deg 19' S
Approximate Lon: 45 deg 04' E
Observing Ship/Sensor: MV City of Toronto (32540)
Observor(s): G. Shearer, Chief Officer; J. Davies, Cadet; E. Oliver, Second Officer; D. Dolaphilla, Third Officer
Description: 28-July-76 Mombasa to Colombo Pos 03 deg 18'S 45 deg T 04'E Course 081 deg spd 16 kts. Ht. of eye 61' (sixty one). 29-July-76 At daybreak 0220 G.M.T. Pos 02 deg 55'S 47 deg 52'E Course 082 deg T 16 knots. At the time the whole atmosphere, sea, sky turned completely milky white in colour such that the horizon was indistinguishable and D.O. stars visible. Prior to this there had been traces of cumulus cloud [3/8 cl1] with good visibility after passing rain showers at 1500 GMT. This complete whiteness lasted [approx?] 70 minutes, and then the sky became visible with a distinct horizon. But the sea remained white as though illuminated from below in all directions. No apparent sudden change in atmospheric pressure or temp. were observed as the following table shows and the sea remained this white colour until day break on the 29th 0220 G.M.T. At 1630 GMT the wind appeared to have dropped dead right from SE'lt (F4) to calm and the sea surface appeared to be very glassy, with the bow wave hardly breaking. ON the whole our first impressions were that a sea mist or a low level sea smoke had occurred but the use of the 'Aldia lamp' dispelled this theory. When the 'Aldis' ws shone on the water, small brilliant 'red lights' were observed in the ships bow wave, whilst the phosphorescent was restricted to a dull turquioise glow in a band about 18 (inches) wide along the ships side. No phosphorescent flashes were observed. These condiition continued throughout the night. The radar was also used but nothing unusual was observed. While the hoirzon and sky became visible stars were observed down to

about 5 deg altitude and a check on many of the brighter ones failed to reveal any svintillation. A sea water sample was taken at 1715 GMT and this appeared clear. 1745 GMT dense patchs of cirius [2/8 CH2] were observed developing in a S'ly direction, then being stationary nad dissolving with about half an hour. Occasional wind waves were beggining to break from a SSE direction (Force 3). Too dark to observe swell waves but if any then slight. 1900 G.M.T. dark narrow patches were seen stretching across the wake from about 2-3 minutes while vessel crossed it clear. More similar patches seen occasionally thereafter. 2000 GMT a sample of sea water was taken while vessel crossed these dark patches, and tiny white particles could be seen settled at the bottom of the container. 2100 GMT horizon could be observed more sharply but condition of sea - same. 2330-2030 GMT Wind dropped to a dead calm, the sky cleared up completely, and the horizon became clear cut and distinct. Gentle breeze from SSE at 0030 GMT and clouds developing carrying rain with them. Vessel experienced fine drizzle from 0050 to 0058 GMT - wind gradually increased to force 3. [There is a table of temperatures, pressure, and wind estimates at 1300,1630,1700,1800,2100,and 2400 GMT]
Reported In: Letter to Dr. Herring
Approx Location: Somalia
Confidence In Sighting: High Confidence

1.292 Somalia 1976 L

Observation Start Date: 07/28/1976
Observation Start Hour: 19:30 GMT
Observation End Date: 07/28/1976
Observation End Hour: 21:40 GMT
Approximate Lat: 10 deg 40' N
Approximate Lon: 54 deg 15' E
Observing Ship/Sensor: Carcape
Observor(s): A. Davis
Description: CO 207 (T) Speed 11 knots S.MT=GMT+4. For a period of 2 hrs 10 mins from 1930 to 2140 GMT the vessel passed through a "MILKY SEA" which gave off a strong and constant greyish glow as far as the eye could see. Visibility at the time was about 10 miles. The wind was SSW 7 though during the period the vessel passed through the "Milky Sea" the sea was calm with only the swell persisting. The following observations were made at the time - Barometer 1006, Air temp 25 C, Sea Temp 25 C, Relative Humidity 84%, Dew Point 22. When the vessel entered clear water which could be seen approaching in a distinct line, the glow could be seen astern and the sea became rough again. I regret I was unable to obtain a sea water sample.
Reported In: Letter to Dr. Herring
Approx Location: Somalia
Confidence In Sighting: High Confidence

1.293 Tanzania 1976

Observation Start Date: 07/30/1976
Observation Start Hour: 18:00 GMT
Observation End Date: 07/30/1976
Observation End Hour: 21:30 GMT
Approximate Lat: 4 deg 45' S
Approximate Lon: 48 deg 56' E
Observing Ship/Sensor: MV Post Runner (32731)
Observor(s): (?)
Description: 30 July 1976 at 1800 GMT in position 4 deg 45'S 48 deg 56'E. Vessel passed through

exceptional bioluminescence. Sea was observed as completely milky white and no wave forms could be distinguished despite a force 3 wind. There were few clouds and the moon set at approx 1730 GMT. While the moon was still visible the luminescence was not as pronounced as later observed after the moon set. The luminescence disappeared at approximately 2130 GMT.
Reported In: Letter to Dr. Herring
Approx Location: Tanzania
Confidence In Sighting: High Confidence

1.294 Oman 1976

Observation Start Date: 11/19/1976
Observation Start Hour: 19:40 GMT
Observation End Date: 11/19/1976
Observation End Hour: (?)
Approximate Lat: 25 deg 12' N
Approximate Lon: 57 deg 37' E
Observing Ship/Sensor: MV Strathtay (32845)
Observor(s): T. Leuty, Third Officer
Description: 18 November 1976 at 1940 GMT in position 25 deg 12'N 57 deg 37'E. Course 142 deg (T), speed 14 knots. While on passage through the Gulf of Oman, the look-out reported a strange light ahead. On closer inspection it was found to be in the water stretching across the bows of the ship for a distance of approximately 100 yards. The light was of a "milky white" nature and was approximately 15 feet in width. On passing through "the band of light", the wash from the vessel erupted into a brilliant green colour illuminating the whole superstructure aboard, this lasted for about 10 minutes.
Reported In: Letter to Dr. Herring
Approx Location: Oman
Confidence In Sighting: High Confidence

1.295 Somalia/Socotra 1976 C

Observation Start Date: 12/27/1976
Observation Start Hour: (?)
Observation End Date: 12/27/1967
Observation End Hour: (?)
Approximate Lat: 14 deg 08' N
Approximate Lon: 55 deg 32' E
Observing Ship/Sensor: MV Gandara (33328)
Observor(s): A. Lewis, Second Officer
Description: 27 December 1976 in position 14 deg 08'N 55 deg 32'E. Course 029 deg (T) speed 13 knots. Type - 'Milky Sea'. The entire sea appeared to glow continuously, the effect was rather like a snow covered landscape under very bright starlight colour- white, duration 10 minutes. Sea temp 25 deg C, air temp 24.7 deg C. Cloudless, the sky being very clear, with no trace of mist or haze. Wind NE 1/2. Both before and after there was the more 'normal' luminescence in the bow wave. Third Officer reported one similar period of 'white water' prior to this time. Radar in use both before, during and after occurrence, an Aldis lamp projected on to the sea surface excited no further luminescence, but did reveal fairly numerous, although scattered, orange coloured 'cats eyes' these stopped shning as soon as the lamp was switched off or directed away from them and appeared to hae a motion independent of water movement. Possibly reflection from surface feeding fish? Bow wave luminescence continued until 3 hours after observation.
Reported In: Letter to Dr. Herring

Approx Location: Somalia/Socotra
Confidence In Sighting: High Confidence

1.296 Somalia 1977 A

Observation Start Date: 08/03/1977
Observation Start Hour: 17:30 GMT
Observation End Date: 08/03/1977
Observation End Hour: (?)
Approximate Lat: 03 deg 25.2' N
Approximate Lon: 48 deg 35.2' E
Observing Ship/Sensor: (?)
Observor(s): (?)
Description: Het volgende verschijnsel waargenomen op 03.08.1977 Te +/- 17.30 GMT. Tyd a/board is GMT + 3 uur. Satelietpositie te 1814 GMT: 03 gradens 25.2' N en 48 gradens 25.2' O. Koers 036 gradens r.w. snelheid 14.6 mjl/uur. De heersende omstandigheden waren als vocgt: Bewolking 3/8, van het tpye Cl 2. Wind ZW Kracht 4 op schaal van Beaufort. Te 1730 GMT werd plotseling een haarscherpe scheiding waargenomen in het zeewater en wel tussen een wit en donker gedeelte binnen 5 minuten was de zee rondom één witte massa, waarin vanaf de brug (ooghoogte 38 mtr) de golfkammen schroef en boegwater niet meer te zien waren. De sterrenhemel was echter duidelyk zichtbaar het zicht bleef vitstekend en de kim was nog scherp te zien. De temperatuur en het SG van het zeewater bedroegen resp. 27 gradens C en 1027. Bg het opkomen van de maan om +/- 1830 GMT verdween het vershijnsel langzamerhand om te 1900 GMT. Geheel opgeheven te zjn. Maanstand was 3 dagen na volle maan. De radar stond by doch hierop was niets waartenemen verder geen byzonderheden te vermelden.
Reported In: Tim Wyatt, Unpublished Notes/Paper
Approx Location: Somalia
Confidence In Sighting: High Confidence

1.297 Banda Sea 1977 A

Observation Start Date: 08/04/1977
Observation Start Hour: 12:00 GMT
Observation End Date: 08/04/1977
Observation End Hour: 13:40 GMT
Approximate Lat: 08 deg 21' S
Approximate Lon: 129 deg 50' E
Observing Ship/Sensor: MV Gowanbank (34076)
Observor(s): P.J.B. Gates, Third Officer; P. J. Elder, Master
Description: 4 August 1977 in position 8 deg 21'S 129 deg 50'E. Between 1200 and 1340 GMT the vessel passed through a large area of milky-white luminescence. The sea was calm with no wave crests present and so appeared dull just like a sea of milk. Even the bow wave did not glow as in the siting of the 12 November - infact it was very much duller. However, prior to the vessel entering this area of milky-sea a large area of the horizon was lit up as if by a large town.
Reported In: Letter to Dr. Herring
Approx Location: Banda Sea
Confidence In Sighting: High Confidence

1.298 Somalia 1977 B

Observation Start Date: 08/04/1977
Observation Start Hour: 17:35 GMT
Observation End Date: 08/04/1977
Observation End Hour: 18:00 GMT
Approximate Lat: 3 deg 12' N
Approximate Lon: 50 deg 30' E
Observing Ship/Sensor: SS British Renown (33972)
Observor(s): R. R. Francis, Third Officer
Description: 4th August 1977 1735-1800 G.M.T. 03 deg 12'N 050 deg 30'E V/L entcounters a very large area of bioluminescence (milk white sea). The area stretching from each horizon. Wind SSW about 10 kts. Course 035 deg (T) ship's speed 10.5 kts. There was a apparent increase in luminosity and a smell of fish and sea-weed, between 1800 and 1805 it decreased, after 1805 the bioluminescence became more intense and lasted til 1911 G.M.T. At 1823 the dry temp was 24.4 deg C and the wet bulb was 23.2 deg C. At 1828 the sea temp was 24.5 deg C. The intensity was so much that the deck was just a black shadow. At 1855 G.M.T. clouds started forming on the horizon ahead and the moon started rising [???] points on the stb'd bow. During this phenomena the radio officer noticed a decrease in signal strength on IDF and an increase in statc of MF. 1911 Sea [???] is normal with clouds invading the sky and the moon was partly visible through cloud base. R. R. Francis 3/o.
Reported In: Letter to Dr. Herring
Approx Location: Somalia
Confidence In Sighting: High Confidence

1.299 Java 1977

Observation Start Date: 08/07/1977
Observation Start Hour: 14:50 GMT
Observation End Date: 08/07/1977
Observation End Hour: 15:30 GMT
Approximate Lat: 10 deg 27' S
Approximate Lon: 106 deg 22' E
Observing Ship/Sensor: MV Cape York (34087)
Observor(s): (?)
Description: 7 August 1977 at 1450 GMT, in position 10 deg 27'S 106 deg 22'E. On passage from Melbourne towards Singapore. Vessel entered a large area of milky water. The whole sea area was of a blue/white colour. The Aldis lamp was shone onto the sea and several large lumps of luminescence were observed. The milky water remained until 1520 GMT when the vessel appeared to pass through a patch of 'white mist', then after this the milky water began to fade until 1530 GMT when the sea was back to normal. Air temp 25 deg C, Barometer 1011 mb, Wind E Force 4, Visibility 10 miles. Course 338 deg (T), Speed 14 1/2 knots.
Reported In: Letter to Dr. Herring
Approx Location: Java
Confidence In Sighting: High Confidence

1.300 Somalia 1977 C

Observation Start Date: 08/10/1977
Observation Start Hour: 11:00 GMT
Observation End Date: 08/10/1977
Observation End Hour: 15:30 GMT

Approximate Lat: 03 deg 44' N
Approximate Lon: 48 deg 09' E
Observing Ship/Sensor: State of Orissa
Observor(s): M.S. Panwan, Chief Officer; Kaushal Gupta, Second Officer; H.S. Sand, Cadet; G.S. Wig, Cadet
Description: During the above mentioned period the phenomenon of milky sea was observed continuously. At the beginning, the visibility was reduced to 4-5 miles but improved after a couple of hours. Sea and swell decreased and a few white horses were only noticed. Wind: SW, force 4; Swell:SW 2 kt; Pressure: 1014.6 mb and visibility: 4-5 miles.
Reported In: Tim Wyatt, Unpublished Notes/Paper
Approx Location: Somalia
Confidence In Sighting: High Confidence

1.301 Timor Sea 1977

Observation Start Date: 08/12/1977
Observation Start Hour: 10:30 GMT
Observation End Date: 08/12/1977
Observation End Hour: 12:45 GMT
Approximate Lat: 8 deg 29' S
Approximate Lon: 128 deg 08' E
Observing Ship/Sensor: MV Cape Horn (33837)
Observor(s): D. Innes, Master; L. Morrison, Chief Officer; R. Simpson, Cadet; C.A. Campbell, Third Officer
Description: 12.8.77 1030Z Posn 8 deg 29'S 128 deg 0'E Air Temp 29.5 deg (dry) 25 deg (wet) Dew Point: 22 deg. Wind SW Force 2. Sea Temp 25.5 C. White sea observed which appeared to light whole sky. Cloud cover at observation 1/8. No moon at Obs. When Aldis lamp was shone on sea, sea surface looked normal, but when shone into the air, particles of "matter" were observed in the beam. These particles were not water vapour. Visibility looked as though it was affected, but was in excess of 16 miles. It is interesting to note that a sister ship "Cape Rosnery" observed the same phenomena 24 hours previously. A sea sample was not taken as we have no preservative. The effect was very similar to steaming through Ice. 12.8.77 1245Z 08 deg 19.5'S 127 deg 38'E Air temp 26 deg Dry 25 deg C wet. Dewpoint 25 deg. Ships speed 15 kts. The white sea phenomena disappeared
Reported In: Letter to Dr. Herring
Approx Location: Timor Sea
Confidence In Sighting: High Confidence

1.302 Somalia 1977 D

Observation Start Date: 08/13/1977
Observation Start Hour: 23:00 GMT
Observation End Date: 08/14/1977
Observation End Hour: 01:30 GMT
Approximate Lat: 3 deg 30' N
Approximate Lon: 50 deg 00' E
Observing Ship/Sensor: SS British Explorer (34042)
Observor(s): N. Palmer, Second Officer; P. Herbden, Third Officer
Description: 2300Z 13th August 1977 V/L entoured "white sea" phenomena in position 3 deg 30'N 50 deg 00'E. Sea from horizon to horizon glowing with pale green/white light, best described as though the vessel was palced on a table made of opaque light green glass dimly lit from below. Weather conditions

at time of observations Wind SWxW force 4 moderate sea with good visibility. Wet bulb 23.3 deg C Sea Temp 23.9 deg C having fallen from 25 deg C at 1200Z 13th August 77. The shining of an aldis lamp on the sea surface had no apparent effect on brightness. 0130Z 14th August '77 light fades and disappears leaving a clearly defined boundary astern. Note: Area of observations similar to that of SS London Pride & SS Texaco Bombay (Marine observer January 77)
Reported In: Letter to Dr. Herring
Approx Location: Somalia
Confidence In Sighting: High Confidence

1.303 Banda Sea 1977 B

Observation Start Date: 08/25/1977
Observation Start Hour: 00:00 LOC
Observation End Date: 08/25/1977
Observation End Hour: 08:00 LOC
Approximate Lat: 5 deg 00' S
Approximate Lon: 125 deg 40' E
Observing Ship/Sensor: MV Silver Bridge
Observor(s): W.R. Donaldson, Second Officer; Mrs M.A. Donaldson; Miss K.L. Donaldson; Chief Officer D.J. O'neill
Description: On the morning of 25th August 1977 at 0220 hrs L.T. (241820Z) it was observed that there was a glow around the vessel similar to that mentioned in the marine observers handbook page 112 last sentence. At 0250 a bright line of light was seen ahead of the vessel on a line with the horizon, as the vessel moved towards this line the horizon disappeared and the vessel seemed to be climbing. It was also observed that from the line of light right to the horizon the sea was glwoing with a "ghostly" green/white light. There was a definite edge to this phenomenon which passed the vessel at 0355 and by 0410 the whole was was glowing for 360 deg and from the ship to the horizon. This lasted until morning twilight. Even though the anemometer gave readings of 2-5 the sea surface was smooth. No sea temp. this vessel being U.M.S. and has no means of taking temp from bridge. General Weather 3/8 1/8 C_L 1. Cumulus with little vertical extent. good visibility. P.S. The only thing we can think of that could have caused this phenomenon was the earthquake on the 22nd August near the Lombok Strait.
Reported In: Letter to Dr. herring
Approx Location: Banda Sea
Confidence In Sighting: High Confidence

1.304 Somalia/Socotra 1977 A

Observation Start Date: 09/04/1977
Observation Start Hour: 17:00 GMT
Observation End Date: 09/04/1977
Observation End Hour: 19:45 GMT
Approximate Lat: 16 deg 20' N
Approximate Lon: 60 deg 06' E
Observing Ship/Sensor: SS British Explorer (34042)
Observor(s): P. Hebden, Third Officer
Description: 1700Z 4th September 1977 Observer P Hebden 3/O V/L encountered "Milky Sea" phenomena in position 16 deg 20'N 60 deg 06'E. the appearance of the sea was the same as described above [The August 13th encounter]. The weather at this time wind SW Force 7, sea rough (continuous light seas whipped on weather like [18' freebound]) Monsoon [???] ~ vis estimated to be 8 miles. Air temp 25.7 deg C wet bulb 24.1 deg C Sea temp 25.8 deg C. A sample of the sea water was taken the temp

was 25.8 deg C. we were doubtful of how best to preserve this sample as we have none of the chemicals suggested in the observers handbook onboard. We eventually decided to freeze the sample. The shining of an Aldis lamp on the sea surface had no effect on the brightness. 1830 4/9/77 Stars visible overhead occasionally Sea brightnes seems to decrease. "white horses" are now visible on the sea surface whereas before they were indiscernible. 1900Z 4/9/77 Moonrise. Sky o'cast seas appearance the same as 1830Z. The moon itself is not visible though there is a slight brightening in the sky to the East. 1945Z 4/9/77 Moon now visible occasionally through breaks in clouds Brightness gradually fades and disapeared from South.
Reported In: Letter to Dr. Herring
Approx Location: Somalia/Socotra
Confidence In Sighting: High Confidence

1.305 Somalia 1977 E

Observation Start Date: 09/05/1977
Observation Start Hour: 17:00 GMT
Observation End Date: 09/05/1977
Observation End Hour: (?)
Approximate Lat: 13 deg 20' N
Approximate Lon: 59 deg 10' E
Observing Ship/Sensor: SS British Explorer (34042)
Observor(s): P. Hebden, Third Officer
Description: 1700Z 5/9/77 V/L once again encounters "milky sea" phenomenon V/L's position: 13 deg 20'N 59 deg 10'E. The sea surface once again took on the same appearance as before. The shining of an Aldis Lamp and the turning on/off of the radar again had no effect on the brightness of the water. A water sample was obtained. As the water was poured into the bottle bright 'spots' were observed in the water. They lasted for a few seconds before fading away. The temperature of this sample was 25.2 deg C. It was decided to try a different method of preserving this sample. The sample was treated with four drops of "A meroid G.C." which is described by the suppliers as "a strong, reduced alkaline." After about one hour the bottom fifth of the bottle was cloudy. Weather at time of observation Wind SW force 5. Moderate/rough sea. Good visibility Air temp 25.6 deg C, wet bulb 24.2 deg C, sea temp 25.2 deg C. 1830Z 5/9/77 Sea was very bright sea temp 25.0 deg C. Dark 'patches' observed in water around V/L. These 'patches' appeared to be moving around vessel. As the vessel approached one of these patches it split into two sections and moved away from the bow. I think that this "patchy" effect was having been caused by schools of fish being silhouetted against the sea surface by a light from below. Perhaps the light that causes this white water phenomena is 'generated' from some depth below the sea surface. 2000Z Moonrise sea slightly less bright, sea temperature was 24.9 deg C the sky is lightly clouded below 20 deg although moon not visible yet. 2030Z 5/9/77 1/2 hours fter moonrise, moon is now visible at about 15 deg altitude sea gradually fades and resumes normal appearance. White horses now visible on sea surface. Sea temp 25.0 deg C.
Reported In: Letter to Dr. herring
Approx Location: Somalia
Confidence In Sighting: High Confidence

1.306 Somalia 1977 F

Observation Start Date: 09/06/1977
Observation Start Hour: 18:00 GMT
Observation End Date: 09/06/1977
Observation End Hour: (?)

Approximate Lat: 5 deg 00' N
Approximate Lon: 49 deg 00' E
Observing Ship/Sensor: MV City of Toronto (33636)
Observor(s): K. Maclean, Captain; P. White, Second Officer; M.S. Shakespeare, Third Officer
Description: 6 September 1977 at 1800 GMT in position 5 deg N 49 deg E. A phenomenon closely resembling the milky sea or white water, which is occasionally described in The Marine Observer, was observed throughout the hours of darkness. A horizon appeared for part of the time as a clear cut zone of blackness over the white, but at other times visibility was much reduced by the glow. The appearance of the sea was of an indistinct hazy white glow. Throughout the radar was in operation. No reaction to the Aldis lamp was observed. Air temp 25.1C, Sea temp 26.5 deg C, Wind S force 2/3, slight sea low swell at 1800 GMT. At midnight GMT temperatures similar now with a Southerly wind force 4/5, moderate sea and swell.
Reported In: Letter to Dr. Herring
Approx Location: Somalia
Confidence In Sighting: High Confidence

1.307 Arabian Sea 1977

Observation Start Date: 09/06/1977
Observation Start Hour: 18:30 GMT
Observation End Date: 09/06/1977
Observation End Hour: 21:30 GMT
Approximate Lat: 06 deg 16' N
Approximate Lon: 52 deg 43' E
Observing Ship/Sensor: MV Wild Curlew
Observor(s): A. Dorkins, Captain; M. Brown, Second Officer; R. Gemmel, Third Officer; P. Murt, Radio Officer
Description: 6 September 1977. At 1830 GMT an area of bioluminescence, which had the appearance of white sea fog, was observed to the west of the vessel. About 20 minutes later, when the vessel entered the affected area, a diffuse milky light effect was observed just above the sea surface. The sea was clearly visible but the white horses noteably reduced in brightness. No effect was observed on the bioluminescence when the Aldis lamp was switched on. At its brightest the phenomenon was sufficent to illuminate the clouds. There was no moon that night, the luminous effect was, therefore, due entirely to the phenomenon. The bioluminescence began to reduce in intensity at about 2100 and was no longer observed about half an hour later. A sample of sea-water was taken and was observed to be clear and normal. It was also noted that the water showed no response when exposed to a fluorescent ultra-violet light. Position of ship: 06 deg 16'N, 52 deg 43'E.
Reported In: Mar. Obs. 1978, 07, Vol XLVIII, no 261
Approx Location: Arabian Sea
Confidence In Sighting: High Confidence

1.308 Somalia 1977 G

Observation Start Date: 09/07/1977
Observation Start Hour: 18:15 GMT
Observation End Date: 09/07/1977
Observation End Hour: 22:10 GMT
Approximate Lat: 11 deg 30' N
Approximate Lon: 54 deg 25' E
Observing Ship/Sensor: Nedlloyd Dejime

Observor(s): C. van Ruitenburg, Captain; J. L. Schot, 2nd Officer
Description: Betreft: Waarneming melkzee. Op de EW van 7e en HW van 8e september 1977 werd van 18.15-19.00 GMT en van 20.30-22.10 GMT tussen de posities 11-20.0N en 11-40.0N het volgende 55-10.0O 53-40.0O. Waargenomen: De zee was spierwit, terwijl de hemel zich hier zwart tegen aftekende. Schuimplekken op het water tekenden zich af als zwarte vlekken. Dezelfde lucht die kenmerkend is voor die an opwellend dieptewater, was ook hier te ruiken. Sterren, die op een hoogte van 10 gradens en hoger stonden, bleven goed zichtbaar. Hoewel er een ZW-lijke deining liep met een golfhoogte van 4 á 5 meter en een ZZW-lijke zeegang van 3 á 4 meter hoogte, waren deze in de witte zee niet te zien. Toen we ons nog buiten de melkzee bevonden, leek het eerst als het schijnsel van de lichten van een grote stad die nog achter de kim ligt; dichterbij komend kreeg het het aanzien van een mistbank. Af en toe was +/- 1/3 van de zee spierwit, terwijl het andere gedeelte een vaal witte kleur had, maar dat varieerde erg sterk. Ondanks het feit dat het mistig leek en er geen kim te zien was, bleek een schip op 10 mijl afstand toch goed zichtbaar. De luchtdruk steeg beide keren dat de oplichting het felst was (ZIE bijgevoegde barograafstrook). De wind nam af tot +/- 16 mijl/uur, terwijl deze weer toenam na 22.00 GMT tot +/- 30 mijl/uur. Rond 21.50 GMT, de verkleuring het felst en de kim zeer scherp, waren hoogte observaties van sterren goed mogelijk. Na 22.10 GMT vervaagde alles erg snel en na 5 minuted had alles z'n normale kleur weer. De deining en zeegang werden weer zichtbaar ende wind nam toe toe 7 Bft. Naast het schip zag het water er inderdaad uit als melk. Verder gaf het geheel dezelfde indruk als een negatief van een zwart/wit foto. Vanwege de hoge snelheid van het schip was het niet mogelijk om een watermonster te nemen.
Reported In: Tim Wyatt, Unpublished Notes/Paper
Approx Location: Somalia
Confidence In Sighting: High Confidence

1.309 Somalia/Socotra 1977 B

Observation Start Date: 09/10/1977
Observation Start Hour: 15:30 GMT
Observation End Date: 09/10/1977
Observation End Hour: 21:00 GMT
Approximate Lat: 13 deg 00' N
Approximate Lon: 54 deg 47' E
Observing Ship/Sensor: TSS City of Edinburgh (33893)
Observor(s): S. Murray, Captain; R. A. Dewar, Chief Officer; A. G. Knox, Cadet
Description: 10 September 1977 at 1530 GMT. Vessel in position 13 deg 00'N 54 deg 47'E, entered area of intense bioluminescence which gave a light green appearance as far as could be seen. The ship was silhouetted against this glow and the overall effect was extremely eerie. The luminescence took the appearance of a mist above the surface of the water which parted as the vessel moved through leaving a dark strip around the hull. At times dark bands appeared in the luminescence running with the wind. The phenomena ended at 2100 GMT in position 12 deg 59'N 52 deg 06'E. Air temp 24.5 deg C sea temp 24 deg C Wind south 7/8 barometer 1004.0 mb. Visibility was good throughout.
Reported In: Letter to Dr. herring
Approx Location: Somalia/Socotra
Confidence In Sighting: High Confidence

1.310 Oman 1977

Observation Start Date: 09/10/1977
Observation Start Hour: 15:15 GMT
Observation End Date: 09/10/1977

Observation End Hour: 18:00 GMT
Approximate Lat: 18 deg 30' N
Approximate Lon: 59 deg 00' E
Observing Ship/Sensor: MS Ansum
Observor(s): (?)
Description: 1515-1800 geheel witte lichtende zee; heldere lucht; temp zeewater 24,6 gradens; temp buitenluche 26 gradens; Bar. 1006,3 mb. goed zicht, Wind ZZW 6; droge bol 26,2, natte bol 23,8. Koers 205 gradens, vaart 13,5 mijl per uur stampend schip
Reported In: Tim Wyatt, Unpublished Notes/Paper
Approx Location: Oman
Confidence In Sighting: High Confidence

1.311 Somalia/Socotra 1977 C

Observation Start Date: 09/12/1977
Observation Start Hour: 22:45 GMT
Observation End Date: 09/12/1977
Observation End Hour: 23:45 GMT
Approximate Lat: 13 deg 03' N
Approximate Lon: 54 deg 46' E
Observing Ship/Sensor: SS Kowloon Bay (33637)
Observor(s): (?)
Description: 12 September 1977 at 2245-2345 GMT. Positions 13 deg 03'n 54 deg 46'E to 12 deg 57'N 54 deg 09'E (North of Socotra). Speed 22 knots. The phenomenon was exactly as described by the Texaco bombay in the January 1977 Marine Observer, a "ghostly experience", it was as though the ship and sea were a black and white negative. The glow from the bioluminesence was observed 15 miles before actually entering the area. It was not possible to obtain a bucket of surface water as the vessel was travelling too fast. Shining an Aldis lamp on the surface had no affect either. Barometer 1003 mb, cloudless sky, Temp 26 deg C, Sea temperature 26.5C on entering area and 25.0 deg C on leaving area.
Reported In: Letter to Dr. Herring
Approx Location: Somalia/Socotra
Confidence In Sighting: High Confidence

1.312 Somalia/Socotra 1977 D

Observation Start Date: 09/14/1977
Observation Start Hour: 17:30 GMT
Observation End Date: 09/14/1977
Observation End Hour: 18:15 GMT
Approximate Lat: 12 deg 49' N
Approximate Lon: 52 deg 14' E
Observing Ship/Sensor: SS Tokyo Bay (33792)
Observor(s): D.M. Belk, Captain; F. R. Barry, Second Officer
Description: 14 September 1977 between 1730 and 1815 GMT. Position 12 deg 49'N 52 deg 14'E. Course 105 deg (T) speed 22 knots. Approximately 23 miles NNE of Kal Farun, vessel ran into an area of high bioluminescence. First area lasted 45 minutes, approximately 18 miles long. Sea was completely milky-white and sky inky-black. Shining Aldis lamp on sea surface showed bright sparks of light. Ran out of first patch at 2145 hours local time. Encountered second patch at 2345 local time. Sea temperature 23 deg C, air temp 23.3 deg C, barometer 1005.9 mb.
Reported In: Letter to Dr. Herring

Approx Location: Somalia/Socotra
Confidence In Sighting: High Confidence

1.313 Somalia 1977 H

Observation Start Date: 09/14/1977
Observation Start Hour: 21:10 GMT
Observation End Date: 09/14/1977
Observation End Hour: 22:00 GMT
Approximate Lat: 11 deg 29' N
Approximate Lon: 51 deg 51' E
Observing Ship/Sensor: Abel Tasman
Observor(s): (?)
Description: [This account has no supporting text simply a description of where a milky sea was reported and references to a region of ordinary water within the milky sea and the conditions once it had been passed.] Abel Tasman 14 september 1977. RAPPORT MELKZEE: 21.10 tot 22.00 MTG 11-36N/51-44 E 11-25N/51-58E koers 126; vaart 21.5; luchtdruk 1005.0; droge bol 23.0; natte bol 20.4; zeewater 23.0; wind ZZW Bft 5; "GEWONE"PLEK IN MELKZEE: Luchtdruk 1005.0; droge bol 23.9; natte bol 20.3; zeewater 22.0; Na grense MELKZEE: droge bol 22.7; natte bol 20.1; zeewater 21.0; luchtdruk 1005.0
Reported In: Tim Wyatt, Unpublished Notes/Paper
Approx Location: Somalia
Confidence In Sighting: High Confidence

1.314 Somalia/Socotra 1977 E

Observation Start Date: 09/16/1977
Observation Start Hour: 17:25 GMT
Observation End Date: 09/16/1977
Observation End Hour: 17:43 GMT
Approximate Lat: 12 deg 53' N
Approximate Lon: 52 deg 25' E
Observing Ship/Sensor: SS Liverpool Bay (33758)
Observor(s): R. Moore, Captain; S. Heng, Second Officer
Description: 16 September 1977 at 1725 GMT on passage from Suez to Port Kelang (Gulf of Aden/Arabian Sea). The vessel entered into a north/south line of bright milky water, about 5 minutes later we were completely surrounded and the surface seems to be glowing all round the horizon. The bow waves did not have any affect or changes in the characteristics of the degree of brightness neither did the Aldis lamp. Stars were visible from approximately 10 deg above the horizon, separated from the sea by a layer of dark atmosphere, which makes us feel as if we were floating on the bright surface. 18 minutes later: this phenomenal effect disppeared as we steamed out of the lighted north/south boundary. Ship's course 087 deg (T) speed 24.3 knots. Earlier at 1600 GMT the sea temperature decreased from 30 deg C to 23 deg C within 5 minutes. Weather details: air temp 23 deg C sea temp 23.1 deg C, pressure 1007.8 mb and rising, wind 210 deg (T) at 18 knots. Cumulus clouds in patches, visibility 15 miles. Position of ship 1725 GMT: 12 deg 53'N 53 deg 25'E.
Reported In: Letter to Dr. Herring
Approx Location: Somalia/Socotra
Confidence In Sighting: High Confidence

1.315 Somalia 1977 I

Observation Start Date: 09/20/1977
Observation Start Hour: 15:00 GMT
Observation End Date: 09/20/1977
Observation End Hour: 18:00 GMT
Approximate Lat: 4 deg 17' N
Approximate Lon: 52 deg 58' E
Observing Ship/Sensor: MV Clan Macgregor (33895)
Observor(s): T. R. Parsons, Captain; R. M. Thomas, Chief Officer; A. Cox, Third Officer
Description: 20 September 1977 at 1500 GMT in position 4 deg 17'N 52 deg 58'E. Course 174 deg (T), speed 15 knots. Sea temp 26.2 deg C, air temp 25.4 deg C. Barometer 1011.0 mb, wind SSW 5. At 1540 GMT sea observed to be a creamy whtie in colour, while the sky with a few clouds was black. After about 5 minutes the sea became even whiter and the waves caused by the vessel's movement became almost indeterminable. The effect seemed more pronounced on the port side of the vessel. On shining the Aldis lamp on the water on the edge of the wash the sea appeared a very light green in colour and there was rapid golden flashes of light on the surface. The effect disappeared at about 1800 GMT.
Reported In: Letter to Dr. Herring
Approx Location: Somalia
Confidence In Sighting: High Confidence

1.316 Oman 1978 A

Observation Start Date: 02/03/1978
Observation Start Hour: 11:05 GMT
Observation End Date: 02/03/1978
Observation End Hour: 11:10 GMT
Approximate Lat: 20 deg 40' N
Approximate Lon: 59 deg 26.5' E
Observing Ship/Sensor: SS Chevron Rome
Observor(s): J. J. van der Wiele
Description: Mijne Heren, Op ons trajekt naar de perzische golf, hebben we het volgende verschijnsel geconstateerd. Datum: 03-02-1978 Tijd: 11-10-00 GMT Boordtijd: 02-10-00(04-02-1978) Ooghoogte: +/- 30 meter. Koers: 022. (waar). Vaart: +/- 15 knopen. Positie: 20-40N 59-26,5O. Ongeveer 30 z.m. van noordpunt Masira Island. Om circa 110500 begon het zeewater lichter van kleur te worden en op enige afstand voor het schip werd een duidelijke afscheiding tussen licht en donker gekleurd zeewater zichtbaar. Het "lichten" van zog e.d. nam toe. De maan was nog niet op en ook de bewolking was niet van dien aar, dat een dergelijk kleurconstast door schaduwwerking van de bewolking te verklaren zou zijn. Te 111000 GMT passeerden wij de afscheiding tussen licht en donker gekleurd zeewater. Deze grens was zeer scherp. en zowel aan BB als aan SB te zien als een rechte lijn, end ie zich richting 085 gradens resp. 265 gradens uitstrekte. De laatste 50 a 100 meter voor de afscheiding was (of leek) het water het lichtsts van kleur (vaal/grijswit) en het lichten van de zee zeer sterk geworden. Waarnemer nr.4 J.J. van der Wiele.
Reported In: Tim Wyatt, Unpublished Notes/Paper
Approx Location: Oman
Confidence In Sighting: High Confidence

1.317 Socotra 1978 A

Observation Start Date: 07/11/1978
Observation Start Hour: 23:00 GMT

Observation End Date: 07/11/1978
Observation End Hour: (?)
Approximate Lat: 16 deg 21' N
Approximate Lon: 54 deg 27' E
Observing Ship/Sensor: MV Gazana (34791)
Observor(s): M. A. Branding, Second Officer
Description: 11 June 1978 on pasage from Bahrain towards Suez. 2300 GMT in position 16 deg 21'N 54 deg 27'E. In Arabian Sea about 45 miles south of Salalah vessel encountered the 'milky sea' affect of marine bioluminescence. The whole covered an area of about 10 square miles, being about 5 miles wide on the vessel's track of 245 deg (T). The light caused was as strong as a fairly bright moon thinly veiled by cloud.
Reported In: Letter to Dr. herring
Approx Location: Socotra
Confidence In Sighting: High Confidence

1.318 Oman 1978 B

Observation Start Date: 08/01/1978
Observation Start Hour: 20:30 GMT
Observation End Date: 08/01/1978
Observation End Hour: 22:05 GMT
Approximate Lat: 17 deg 25' N
Approximate Lon: 59 deg 20' E
Observing Ship/Sensor: British Forth (36828)
Observor(s): A. Failla, GP1; M. Percival, Second Officer
Description: White Water/Milky Sea in the Arabian Sea. Time: 2030Z 1st August 1978 (0030/2nd Ship's time) Position: 17 deg 25'N 59 deg 20'E Course: 007 deg T. Speed 15 1/2 knots, weather: wind SW5, M~R seas, no cloud cover, haze with visibility approximately 7'. moonless night with no stars visible below an altitude of 25 deg. Between 2030 and 2100 there was a gradual change in the differential colouration of the sea and sky from the normal dark night IE sea+horizon darker than the sky, the two gradually merged, and then the sea took on the paler hue and in constrast the sky was black. The colour of the sea was similar to the colour of the sea seen on a moonlit night when lightly overcast. Brighter stars were visible throughout the sea reverted back to normal gradually. 2140~2150Z the same occurred but more rapidly however when the white water disappeared the horizon to the north and west of the ship was considerably brighter than that to the east. By 2155Z the brightening of the horizon was similar in appearance to the sighting of a fog bank in daylight, with the same intense "whiteness" to it. By 2200 the white water had returned, but its intensity this third time was far greater than the previous two experienced. By 2205 it had again disappeared. On the last occasion, which was a sudden transformation, the leading edge of the white water ran approximately in the direction of 030 deg/210 deg, and must have been approximately 1.3 miles wide (based on time running through it), and extending horizon to horizon, therefore 10~14 miles long. Unfortunately a sample of the water was not obtained.
Reported In: Letter to Dr. Herring
Approx Location: Oman
Confidence In Sighting: High Confidence

1.319 Oman 1978 C

Observation Start Date: 09/01/1978
Observation Start Hour: 15:30 GMT

Observation End Date: 09/01/1978
Observation End Hour: 15:45 GMT
Approximate Lat: 17 deg 05' N
Approximate Lon: 57 deg 57' E
Observing Ship/Sensor: MV British Centaur (35008)
Observor(s): M. J. R. Fordham, Second Officer
Description: 1 September 1978 at 1530 GMT, vessel bound from Mombasa towards Dubai. Position 17 deg 05'N 57 deg 57'E. Milky sea phenomena in vicinity of ship to horizon (visibility approx 6 miles) dark patches appeared within the phenomena. Duration of sighting approx 15 minutes. Course 022 deg (T) speed 16 knots.
Reported In: Letter to Dr. Herring
Approx Location: Oman
Confidence In Sighting: High Confidence

1.320 Socotra 1978 B

Observation Start Date: 09/03/1978
Observation Start Hour: 17:40 GMT
Observation End Date: 09/04/1978
Observation End Hour: 00:10 GMT
Approximate Lat: 17 deg 00' N
Approximate Lon: 54 deg 00' E
Observing Ship/Sensor: SS Esso Caledonia (34826)
Observor(s): G. S. Nixon, Third Officer; N. Watkins, Third Officer
Description: 3-4 September 1978 on passage from Ras Tannura towards Rotterdam. Approx position 18 deg 00'N 58 deg to 17 deg 00'N 54 deg 00'E. Between 1740 GMT and 0010 GMT the vessel passed through areas where the sea from horizon to horizon glowed a milky white with a vague green tint to it. The light given off was only a dull glow but it was strong enough to make the ship appear as a jet black shape passing through it. An aldis lamp flashed onto the surface had no affect except to make the phenomena disappear. Cloud cover: 7-8/8. Sea temp 23.3 deg C. (4 deg rise in sea temperature noted between 0600 and 1800 GMT 3 September). Faint smell of rotting seaweed or something similar noted.
Reported In: Letter to Dr. Herring
Approx Location: Socotra
Confidence In Sighting: High Confidence

1.321 Oman 1978 D

Observation Start Date: 11/19/1978
Observation Start Hour: 17:00 GMT
Observation End Date: 11/19/1978
Observation End Hour: (?)
Approximate Lat: 18 deg 13' N
Approximate Lon: 57 deg 23' E
Observing Ship/Sensor: Strathnaver (32927)
Observor(s): J.C. Etheridge, Third Officer; N.D. Maclean, Deck Cadet
Description: 19th November 1976 Time 1700 GMT. In DR Position 18 deg 13'N 57 deg 23'E course 217 deg T, speed 15 Kts. Weather: Temperatures: Wet Bulb 22.5 deg C, dry bulb 26.3 deg C, pressure 1013.6 mb, wind NExN force 3. Observed several patches of bioluminescent bloom close on the starboard bow, moving across in a SExE'ly direction. The largest was oval in shape and approximately 300 ft long by 100 ft wide; the others (about 4 in numbers) were irregularly shaped and about 80 ft across. The

luminescence was of a milky white colour and continuous. No abmornal smell was noticed. Observers: J.C. Etheridge 3/o and N.D. Maclean, Deck Cadet.
Reported In: Letter to Dr. Herring
Approx Location: Oman
Confidence In Sighting: High Confidence

1.322 South China Sea 1979

Observation Start Date: 01/30/1979
Observation Start Hour: 14:30 GMT
Observation End Date: 01/30/1979
Observation End Hour: 15:30 GMT
Approximate Lat: 17 deg 24' N
Approximate Lon: 116 deg 57.3' E
Observing Ship/Sensor: MV Tokyo Bridge
Observor(s): E.G. Brady, Master, A. Westlake, Third Officer
Description: Time: GMT 1430 SMT 2230. Position: Lat 17 deg 24'N, Long 116 deg 57.3'E. Wind: NE force 7 to force 8. Barometric Pressure (Corrected): 1019.2 mb. Air Temperature: Dry Bulb 23 deg C, Wet Bulb 20 deg C, Sea Temperature: 25 deg C. Weather: Cloudless Sky, fine and clear. At 1430Z on the 30th of January, whilst the vessel was 210 nautical miles east of Luzon Island in the South China Sea, on passage between Singapore and Nagoya, the sea in all directions as far as the horizon was observed to be of a pale whitish "milky" luminescent colour. The luminescence was most pronounced close to the vessel and in it's wake. The strength of the "glow" at first gave the impression of fog but the visibility was determined from sightings of other vessels to be in excess of ten nautical miles. The conditions described persisted for a little over one hour.
Reported In: Letter to Dr. Herring
Approx Location: South China Sea
Confidence In Sighting: High Confidence

1.323 Christmas Island 1979

Observation Start Date: 08/04/1979
Observation Start Hour: 21:55 GMT
Observation End Date: 08/04/1979
Observation End Hour: (?)
Approximate Lat: 10 deg 43' S
Approximate Lon: 106 deg 06' E
Observing Ship/Sensor: MV Andros (Australian Selected Ship)
Observor(s): R.G. Macdonald, Chief Officer
Description: Indian Ocean - Fremantle to Singapore. 4th August 1979. DTG: 04-2155Z. Posn. 10 deg 43'S 106 deg 06'E (26' ExS of Christmas Island) Co 340 deg (T) Speed 15.75 kts. Ta. D 24.5 deg W 22.0 deg C. Ts. 23.0 deg C. Barom 1012.1 & steady. Wind SE5. Cloud Cl 1 1/8 clm nil clm traces Ch. At 2145Z observer noted isolated flecks of bioluminescence in sea and 10 minutes later when checking to see if any in bow wave observed the sea to have a milky appearance giving an eerie effect as if the vessel was steaming thru water dimly lit by fluorescent lighting. Radar on at time but no reaction to this nor shining of aldis light on water. As no sea temp. bucket aboard unable to get water sample. Phenomena started disappating at 2207Z & all gone by 2215Z
Reported In: Letter to Dr. herring
Approx Location: Christmas Island
Confidence In Sighting: High Confidence

1.324 Socotra 1979

Observation Start Date: 08/19/1979
Observation Start Hour: 16:15 GMT
Observation End Date: 08/19/1979
Observation End Hour: 20:45 GMT
Approximate Lat: 11 deg 00' N
Approximate Lon: 61 deg 30' E
Observing Ship/Sensor: SS Osaka Bay (36047)
Observor(s): J.E. Webb, Master; M.W. Hanna, Second Officer; K.S. Hardy, Second Officer; C. Mercer, Log. Seaman
Description: On the 15th of August 1979 at 1615 GMT in position 11 deg 00'N 61 deg 30'E bioluminescence was observed. The sea became milky from the ship to the horizon and all around the horizon the light being emitted was quite intense and made the sea appear featureless. It was unaffected by the shining of lights onto the sea surface. The night was clear with no moon and only about 1 ohla[?] of small cumulus cloud. The phenomenon persisted until 2035 GMT when it began disappearing and at 2045 GMT it had completely gone. During this interval the ship steamed a distance of 79 nautical miles.
Reported In: Letter to Dr. Herring
Approx Location: Socotra
Confidence In Sighting: High Confidence

1.325 New Zealand 1979

Observation Start Date: 12/15/1979
Observation Start Hour: 10:00 GMT
Observation End Date: 12/15/1979
Observation End Hour: 11:00 GMT
Approximate Lat: 36 deg 03' S
Approximate Lon: 175 deg 35' E
Observing Ship/Sensor: MV Kwangsi
Observor(s): M.P. Lee, Third Officer
Description: Between 1000~1100Z 15th Dec 1979 and positions 36 deg 03'S 175 deg 35'E and 35 deg 49'S 175 deg 23'E [Course 236 deg T]. Extensive bioluminescence observed in SWxW force 5 of bright intensity and turquoise in colour. No wheel or other forms were evident but the entire area was affected + its limit upon leaving the area was clearly defined as a straight edge running almost due East to West.
Reported In: Letter to Dr. Herring
Approx Location: New Zealand
Confidence In Sighting: High Confidence

1.326 Somalia 1980

Observation Start Date: 02/05/1980
Observation Start Hour: 16:20 GMT
Observation End Date: 02/05/1980
Observation End Hour: 19:30 GMT
Approximate Lat: 03 deg 47' N
Approximate Lon: 51 deg 16' E
Observing Ship/Sensor: MV Matangi (36739)
Observor(s): Third Officer and Master

Description: Tues 5th February 1980 Capetown ~ Basrah. Time 1620Z. Speed 16 kts. D.R> Pos Lat 3 deg 47'N 51 deg 16'E. Co 025 deg T. Sea observed to have marked milky appearance throughout visible range. Sample obtained at above time by sea bucket. Sea temp 26 deg C Air Dry 26.0 deg C wet 24.2 deg C. Phenomenon immediately preceded by what appeared to be a light dust storm. The sea surface colour was similar to that of normal bioluminescence but alltogether brighter and more widespread. The Bridge Aldis signalling lamp was shone on the surface and in the bow wave with no discernable effect; however the sea appeared to be of turquoise colour. Wind Force 2/3 030 deg T slight sea low swell sky: heavily overcast pressure: 1012.7. Time 2230 ST (1930 Z) DR POSN 04 deg 40'N 51 deg 35'E Co 025 deg T SPD 16 kts V/L appears to have cleared area of luminescence altho' deceiving due to bright moon. Sea has taken on normal appearance with no alteration in sea state. 2230 ST 1930Z sea temp 25.8 deg C wind 3 / 030 deg T slight sea/low swell cloudy find+clear pressure 1012.1
Reported In: Letter to Dr. Herring
Approx Location: Somalia
Confidence In Sighting: High Confidence

1.327 Socotra 1980 A

Observation Start Date: 05/31/1980
Observation Start Hour: 19:30 LOC
Observation End Date: 05/31/1980
Observation End Hour: 20:30 LOC
Approximate Lat: 12 deg 30' N
Approximate Lon: 54 deg 00' E
Observing Ship/Sensor: USS O'Brien
Observor(s): Chris Tolton, Lt. US Navy; Reid Hinson US Navy
Description: Totlton: (At) about 1930-2030 hrs, Reid Hinson announced that something unusual out on the seas. Much of the crew went out on deck and we were amazed at what we saw. It was night already and dark. It was like we were in the "Twilight Zone" and peering at a negative of the real world. The seas were glowing with phosphorescence as far as you could see all around us. The ship was darker than the seas, the sky was darker than the seas (normally the seas are the darkest of all). The phosphorescence was uniform and a bit lighter green or "whiter" than the normal screw-generated green phosphorescence (kind of like the glow-in-the-dark plastic stars you can buy your kids). There were no breaks in the phosphorescence even with the waves, i.e., I didn't see any "holes" of dark water but the wave foam was dark against the glowing water. I don't know how deep it went, but it appeared to be deeper than just the surface water - more than several yards deep. Hinson: My impression at that time was that there was a very low level of fog, the top of which was about 10 ft above the water. The fog, coupled with fairly intense bioluminescence, looked like an illuminated blankted that was quite remarkable, almost surreal.
Reported In: Miller et al. 2021
Approx Location: Socotra
Confidence In Sighting: High Confidence

1.328 Somalia/Socotra 1980 A

Observation Start Date: 07/08/1980
Observation Start Hour: 21:30 GMT
Observation End Date: 07/08/1980
Observation End Hour: (?)
Approximate Lat: 12 deg 09' N
Approximate Lon: 57 deg 03' E

Observing Ship/Sensor: MV Benalder (37189)
Observor(s): G.H. Buckley, First Officer; G. Livingston, First Officer; G.M. MacDougall, Cadet
Description: Jeddah - Singapore. On tuesday 8th July and 2130 GMT in position 12 deg 09'N 57 deg 03'E, air temperature 25.9 deg C, wet bulb 22.7 deg C, barometer 1007.0, wind SWxS force 7, sea temperature 24 deg C. While steaming on a course of 105 deg (T) and 23 knots a white glow on the horizon of a cloudless sky was observed, this was deemed to be unknown. On approaching further it appeared to be a white line extending across the horizon from port to starbaord. On crossing into this area the whole sea appeared to be a "milky sea" giving a constant white glow with patches of luminous masses. The sea was so bright that the ship's silhouette appeared vividly against its luminous background. This was believed to be bioluminescence and was observed for approx 5 miles.
Reported In: Letter to Dr. Herring
Approx Location: Somalia/Socotra
Confidence In Sighting: High Confidence

1.329 Socotra 1980 B

Observation Start Date: 07/11/1980
Observation Start Hour: 16:00 GMT
Observation End Date: 07/11/1980
Observation End Hour: (?)
Approximate Lat: 13 deg 00' N
Approximate Lon: 53 deg 34' E
Observing Ship/Sensor: TSS City of Edinburgh (36939)
Observor(s): J.H. Clark, First Officer
Description: North of Socotra. 11th July 1980 1600Z. Position 13 deg 00'N 53 deg 34'E. Course 267 deg (T) Speed 20 kts. Wind South Force 6. Bar 1005.4. Wet 22.5 Dry 26.0. Vessel passed through an area of Milky Sea. The diffused light was green/white in colour. There was no moon or clouds at the time. The decks containers stood out clearly in the light. The Aldis lamp was shone on the surface with no effect. The light lasted about 1 hour with periods of varying intensity. After this had faded away the phenomenom of Bright rapid flashing on the sea surface was visible. At no time was visibility affected.
Reported In: Letter to Dr. Herring
Approx Location: Socotra
Confidence In Sighting: High Confidence

1.330 Somalia/Socotra 1980 B

Observation Start Date: 07/13/1980
Observation Start Hour: 17:30 GMT
Observation End Date: 07/13/1980
Observation End Hour: 19:15 GMT
Approximate Lat: 11 deg 12' N
Approximate Lon: 51 deg 42' E
Observing Ship/Sensor: MV Dover Universal (36932)
Observor(s): C. Gowans, Master; C.A. Precious, Third Officer; P. Evans, Able Seaman
Description: Sunday 13th July 1980 1730Z-1915Z. At 1730 hours G.M.T. the vessel entered a large area of bioluminescence, so large that it completely covered the sea from horizon to horizon. It was not particularly bright but appeared to glow with a luminosity similar to a light being shone on the sea. It was a clear moonless night and this produced an almost supernatural effect, the sea being a few shades brighter than the sky, as though the vessel were sailing on a silver sea of light. A sample of sea water taken for a sea water temperature, with the rubber bucket, revealed small specks of light about the size

of a pinhead when emptied into a tray. When a torch was shown into the tray nothing could be seen, it was only in the dark that the[y] made themselves known. Larger blobs of light could be seen in the vessels wake at frequent intervals. Only once did the bioluminescence diminish for a period of about ten minutes aroound 1820-1830Z but it soon returned eventually disappearing as quickly as it had arrived at 1915Z.
Reported In: Letter to Dr. Herring
Approx Location: Somalia/Socotra
Confidence In Sighting: High Confidence

1.331 Somalia/Socotra 1980 C

Observation Start Date: 07/15/1980
Observation Start Hour: 21:30 LOC
Observation End Date: 07/16/1980
Observation End Hour: (?)
Approximate Lat: 10 deg 00' N
Approximate Lon: 51 deg 00' E
Observing Ship/Sensor: MV New York Star (37060)
Observor(s): N. Mackean, Third Officer; K. Kharas, Second Officer; G. Rawding, Chief Officer
Description: Night of 15/16 July 1980. Position of vessel - 10 00 N 51 00 E. At 2130 hours ships time, two hours after sunset, the vessel passed through an extensive area of luminescence, stretching from horizon to horizon, and of such magnitude that the phenomena was still observed at sunrise the next day, a total period of nine hours. The luminescence resembled a very shallow fog and the light radiated from the sea had the effect of reducing the visible range of other ships navigation lights from fourteen miles to four miles. The sky was totally cloudless throughout the period, and the moon had set two hours previously. Air Temperatures - 260/243. Sea temperature - 242. Barometer - 1011 mbs.
Reported In: Letter to Dr. Herring
Approx Location: Somalia/Socotra
Confidence In Sighting: High Confidence

1.332 Oman 1980

Observation Start Date: 08/16/1980
Observation Start Hour: 23:40 GMT
Observation End Date: 08/17/1980
Observation End Hour: (?)
Approximate Lat: 20 deg 55' N
Approximate Lon: 59 deg 50' E
Observing Ship/Sensor: SS Nordic Commander (37154)
Observor(s): J. Blaber, Master; Ronald O.C. Smith, Second Officer
Description: 16th August 1980 0340 Local Time. Time Zone GMT + 4 Hours. DR Position 20 deg 55'N 59 deg 50'E. General Area: Arabian Sea. At 0340 Local Time the vessel emerged from a thick fog bank. Immediately apparent was a strong white glow from the sea surface, giving the same appearance as snow in all directions. The sky was covered with fog and low cloud but a horizon was visible. There was no moon to cast Light and the vessels maindeck stood out strongly against the sea. The fog bank astern also stood out as black against the sea. Air Temp: 22.5 deg C; Sea Temp 22.0 deg C; D.P. Temp: 22 deg C; Barometer 1000.6 mb; Wind SxE 4
Reported In: Letter to Dr. Herring
Approx Location: Oman
Confidence In Sighting: High Confidence

1.333 Arabian Sea 1981 A

Observation Start Date: 07/31/1981
Observation Start Hour: 20:36 GMT
Observation End Date: 07/31/1981
Observation End Hour: (?)
Approximate Lat: 14 deg 30.2' N
Approximate Lon: 57 deg 34.2' E
Observing Ship/Sensor: SS Lima
Observor(s): A.F. DeVanney, Chief Officer
Description: Once again, I have been fortunate enough to experience the sight of the very remakrable, natural phenomena of the "Milky Sea". This time, after a gap of a little over seven years, and once again in the Arabian sea on two consecutive nights. I am serving as Chief Officer on the 318,000 tonne Shell tanker 'LIMA' which is presently bound on a laden passage from Mina-al-Fahal, in Oman, to Lyme Bay, England. Unlike my previous three sightings of the bioluminescence which appeared shortly after evening twilight, these sightings were not apparent until the Middle Watch. We had left our loading port of Fahal on 27th July and were now proceeding into the heavy seas of the South West Monsoon, steering a course of 209 deg (T) at a speed of 5.2 knots. At 2036Z 31st July, (0036 S.T. 1st August) the sea suddenly turned a "Milky White" giving the effect that we were steaming through a snow covered ploughed field and causing mixed reactions among those on the bridge. Second officer G.J. 'Borus' Lea was the initial observer and, was a little dubious as to what he was seeing. Having only rarely visited the Arabian Gulf area he had not seen the like before. Other observers of the phenomena were: Deck Cadet N.T. Dobson, Chinese G1 seaman Heung Chi Ming of the middle watch, Chinese GL seaman Wong Chu and, Chief Officer A.F.DeVanney of the 4-8 watch. It was also the first sighting for both Cadets and, so far as I could ascertain, of the Chinese Watchkeepers. The effect continued through until morning twilight at approximately 0100Z 1st. Agu. the effect was nowhere near as bright as I had seen it on previous occasions and, possibly due to my having 'seen it before' was not as eerie though was just as fascinating and exciting as in the past. Our position at the time of initially sighting the phenomena as fixed by Magnavox MX1112 Satellite Navigator was 14 deg 55.2'N 57 deg 44.8'E, wind from s.s.w. force 8 (Beaufort Scale) sea state 5, swell 8 (Douglas Scale) with visibility in excess of 12 miles. The sky was clear, barometer 1013m.b. uncorrected ona. Kelvin hughes aneroid type, height of eye 29 metres. Air temperature 26 deg C, sea temperature 26 deg C and, as previously stated, course 209 deg (T) speed 5.2 knots. Satellite position at twilgith, 0100Z, 14 deg 30.2'N 57 deg 34.2'E with the weather conditions similar throughout apart from a rise in barometric pressure of nearly 1m.b. A sea sample was taken and is forwarded separately to your good selves. The usual scepticism was apparent as to what was the cause till the various publications on the subject had been consulted. Most of the observers had seen the phosphorescent trail in the ship's wake and from the bow wave but, this was a new and wonderful experience. I wondered if it was possible that it could appear the following night as I had previously experienced whilst serving as the Second Officer in the s.s. Mengelia back in 1974 but, knowing this to be quite unusual, thought the liklihood of this to be too rara avis. Imagine, then, my delight and surprise upon taking over the watch to find we were indeed, steaming through that snow covered ploughed field! This time the phenomena became visible at 2036Z 1st. Aug 0045 S.T. 2nd. Aug. Satellite position 13 deg 04.3'N 56 deg 44.3'E again steering 209 deg (T) speed 5.35 knots. The effect was apparent till twilgiht ethced its way into the night at approximately 0110Z. Only the cadets were non-observers this time, Sunday being their day of rest! wind was still steady from the S.S.W. force 8 (Beaufort) sea 6 swell 7 (Douglas) visibility around 12 miles and a cloudless sky. Our trusty aneroid read 1013m.b.-uncorrected- rising to 1014.5 m.b. uncorrected, by twilight, air and sea temperatures were both 25 deg C. 0500 satellite pos'n 12 deg 44.3'N 56 deg 32.8'E. The intensity was similar to the previous evenings sighting. Unfortunatley, the Mariners Handbook was 'on loan' from the library so it was until after the sightings that I came across the last paragraph in chapter 6:9 on bioluminescence

and hence, obtain two samples. I am sure that both the M.O.D. and yourselves are in regular contact about such matters so one sample, hopefully, will serve you both. My apologies for this faux pas on my behalf. I have sent a copy of this report to the M.O.D. Taunton. Hoping the above is of some assistance to you. Yours faithfully, A.F. Devanney. Chief Officer S.S. LIMA
Reported In: Letter to Dr. Herring
Approx Location: Arabian Sea
Confidence In Sighting: High Confidence

1.334 Chile 1981

Observation Start Date: 07/31/1981
Observation Start Hour: 00:25 GMT
Observation End Date: 07/31/1981
Observation End Hour: (?)
Approximate Lat: 20 deg 56' N
Approximate Lon: 70 deg 26' W
Observing Ship/Sensor: Oropesa (38169)
Observor(s): M.C. Hill, Cadet; T. J. Sax, Captain
Description: 31st July 1981 0025 GMT (30-7-81 2025 Local Chilean Time) Lat 20 deg 56'N Long 70 deg 26'W - Coast of Chile Course 188 deg (T). Vessel on passage from Iquique to Antoragasta (speed 16 knots). Very strong bioluminescence of a very light green colour, being slightly irritating to the eyes, further away from the vessel the sea had the appearance of being rough as if white horses caused by a force 6 wind, when in fact the wind was no more thann force 4 from the S.W. On the horizon to the S.W. there was a light band similar to what may be seen on a cloudy sky during the period of very early dawn. This phenomena proved to be an optical illusion as within minutes the sea could be seen to be covered in what appeared to be a very low lying illuminated haze, but again this was proved to be an illusion, and in fact, as the vessel passed the area, estimated to be about 1/4 mile on the starboard beam, it could be seen that it was in fact the sea which was glowing with a very pale, milky dim light. This phenomena disappeared within a few minutes. The glowing white horses rough sea effect faded in about 12 minutes, the very bright bow wave began to fade at the same time but remained just visible for a further 15 to 20 minutes. Weather information at the time of observation: sky cloudy 5, wind S.W. 3, slight sea, long low swell, (SW'LY) Baro. 1013.6, Air Temp 14.8, wet bulb 12.9, sea temp 15.9. It may be of interest and have some connection with the above observation that when the vessel arrived at the Iquique anchorage on the morning of the 30th at 0245 (L.M.T.) A ground swell was experienced, at 0700 when the vessel entered port, some difficulty was experienced in securing to the berth, throughout the day the swell increased causing this cessel and the M/V "Blue Master' to part moorings. When the pilot boarded at 1600 to take the 'Oropesa' out of the port, I asked him about the swell, he told me the previous day there was no problem but today the swell was getting strong and that the usual pattern of events was that the swell would most likely increase until tomorrow (31st) when it would be its trongest, then would start to calm down by the latter part of the 31st. And the 1st August, and by the morning of the 4th day would be quiet again. In other words a 3 day period, He also said that these heavy 3 day swells occurred about 4 or 5 times a year.
Reported In: Letter to Dr. Herring
Approx Location: Chile
Confidence In Sighting: Low Confidence

1.335 Arabian Sea 1981 B

Observation Start Date: 08/01/1981
Observation Start Hour: 21:30 LOC

Observation End Date: 08/02/1981
Observation End Hour: 01:20 LOC
Approximate Lat: 13 deg 25' N
Approximate Lon: 56 deg 35' E
Observing Ship/Sensor: SS Mena
Observor(s): J.Y. Simpson, Third Officer; P.F. Redfern, Master
Description: Dear Sir, I wish to submit a report on the sighting of "white water". At the time in question the above vessel was on passage from Mina al Falh to Mombasa. On the evening of the 1st August 1981 whilst on a course of 204 True with a speed of 11 knots in position 1352 North 5635 East the following phenomenon occurred. The weather at the time was SSW 8, barometer 1000 steady, Air temp 25C and sea temp 28 1/2 C. At 2130 Local time the visibility having been 6 miles suddenly lifted to 10 miles and the horizon became sharp where previously it had been hazy due to heavy seas and spray. A band of "White Water" was observed on the port side and was increasing in size. By 2145 hours the creamy white area was now across the path of the vessel and spreading all round the horizon. Estimation of the size of the area would be about 6 miles in diameter coming from an ESE direction. At 2230 hours and the vessel was still in the center of the area of "White Water" and both sea and sky were still intensely illuminated. The effect was that of sailing on top of a cloud. Where the bow wave actually broke the water took on its normal colour but returned to its luminous appearance the moment the water settled. Lights were shone on the surface and the white milky effect disappeared but when the lights were switched off the luminous effect reappeared instantly. 2330 hours and still there was no sign of this effect disappearing although some patches about 3 miles from the vessel appeared more greyish in colour. The sky remained clear and no fluctuation occurred in the air or sea temperatrues, barometer steady, no trace on the Echo Sounder and no magnetic anomaly noted. Although the wind remained force 8 the wave tops had disappeared almost as if a light film of oil had been spread over the surface. 2350 hours and the area ahead looked as if it was returning to its normal state although a large white loom showed across the horizon ahead. Midnight and the normal sea state for force 8 had lasted 10 minutes then once again the vessel was in the midst of this milky white sea. The area was again as large as previously and with the same intense illumination effect. 0045 hours and the sea was now turning from creamy white to a more greyish colour although the size of the area still remained as far as the eye could see all round the horizon. 0110 hours and the effect had thinned out with the sea surface returning to normal for a force 8 gale. By 0120 hours there was no trace of 'White Water" in any direction, it was just as if it had never been. I hope the aforegoing information can be of some value to you and can assit in your further study of this phenomenon. Yours truly, J.Y. Simpson. 3rd. Officer. I would just like to add to the above report that although I have witnessed "White Water" on previous occasions I have never seen such an extensive display as this. The vessel spent four hours sailing through this strange phenomenon some 45 miles. P.F. Redfern. Master.
Reported In: Letter to Dr. Herring
Approx Location: Arabian Sea
Confidence In Sighting: High Confidence

1.336 Oman 1981

Observation Start Date: 08/04/1981
Observation Start Hour: 21:30 GMT
Observation End Date: 08/05/1981
Observation End Hour: 01:00 GMT
Approximate Lat: 19 deg 30' N
Approximate Lon: 60 deg 00' E
Observing Ship/Sensor: SS British Ranger (38131)
Observor(s): C. White, Second Officer; M. Xuereb, Seaman First Grade
Description: 4-8-81 2130Z to 5-8-81 0100Z. Position 19 deg 30'N 60 deg 00.0'E Wind SWxS Force 6.

Visibility 8 miles. At 2130 it was noticed that the horizon was no longer visible and a few minutes later again became visible but now the sea was much ligher than the sky. This was thought at first to be the reflection of the ships lights in some restricted visibility but on switching off the light the glow was still present. The glow increased in intensity and by 2000 the whole sea was glowing evenly and sufficiently brightly to obscure the breaking wave crest, and ships wake. The glow continued with varying intensity until 0100Z when it finally disappeared.
Reported In: Letter to Dr. Herring
Approx Location: Oman
Confidence In Sighting: High Confidence

1.337 Arabian Sea 1981 C

Observation Start Date: 08/18/1981
Observation Start Hour: 15:00 GMT
Observation End Date: 08/18/1981
Observation End Hour: 16:00 GMT
Approximate Lat: 18 deg 06' N
Approximate Lon: 63 deg 05' E
Observing Ship/Sensor: Cape Ortegal (38367)
Observor(s): M.J. Barrington, Second Officer; R.A. Warner, Third Officer; N.C. Duncan, Naval Cadet
Description: Bioluminescence was experienced in the form of a milky white sea lasting for aorund one hour from 1500-1600 HRS GMT on 18th August 1981 in the centre of the Arabian Sea. Position 18 deg 06'N 63 deg 05'E the vessel appeared to be "floating on a white cloud of gas" Capt. L.M. Hocking Observers: M.J. Barrington 2/O, R.A. Warner 3/O, N.C. Duncan Nav. Cadet.
Reported In: Letter to Dr. Herring
Approx Location: Arabian Sea
Confidence In Sighting: High Confidence

1.338 Gulf of Thailand 1981

Observation Start Date: 11/30/1981
Observation Start Hour: (?)
Observation End Date: 12/01/1981
Observation End Hour: (?)
Approximate Lat: 10 deg 00' N
Approximate Lon: 101 deg 00' E
Observing Ship/Sensor: (?)
Observor(s): David Globehill, Private Mariner
Description: The most striking event that I witnessed was the overall sea being a bright emerald green, electric blue at the crests of the waves (formed by the ship's wake/bow wave) with what I can only describe as a giant rotating helicopter blade affect rotating astern and either side of the vessel. It seemed to be resonant with the ship's propeller. Also within the flat calm sea there were frequent pin points of electric blue light.
Reported In: Miller et al. 2021
Approx Location: Gulf of Thailand
Confidence In Sighting: High Confidence

1.339 Gulf of Panama 1982

Observation Start Date: 08/19/1982
Observation Start Hour: 03:30 GMT
Observation End Date: 08/19/1982
Observation End Hour: 04:15 GMT
Approximate Lat: 2 deg 28' S
Approximate Lon: 87 deg 36' W
Observing Ship/Sensor: Mairangi Bay (30903)
Observor(s): S. Barraclough, Third Officer; M. Insly, Seaman First Grade
Description: Observations Made between 0330Z + 0415Z. Port Chalmers to Balboa 19th August 1982 Position of Ship 2 deg 28'S 87 deg 36'W. Whilst proceeding on a course of 038 deg (T) @ 21 KT through the Gulf of Panama towards Balboa. The sea ahead of the vessel had an illuminated appearance as the vessel neared the area, which appeared to be stretching to the horizon on either side of the vessel. The phenomena became more pronounced. The sea having a milky white colour the cloud cover was 8/8 stratocumulus with no moon so reflection was ruled out. The vessel continued to pass through the phenomena for 3/4 of an hour during which time samples were taken of the water, though the samples do not give off any illuminated nor was the water discoloured in any way. The phenomena sloowly faded out At 0415Z. Visibility was approx 12 miles. Sea temp 22.8 deg C; Air Temp (dry + wet) 22.0 deg C 19.6 deg C; Wind SE'ly 2; Barometer 1011.9
Reported In: Letter to Dr. Herring
Approx Location: Gulf of Panama
Confidence In Sighting: High Confidence

1.340 Indian Ocean 1982

Observation Start Date: 09/22/1982
Observation Start Hour: 22:05 GMT
Observation End Date: 09/22/1982
Observation End Hour: 23:15 GMT
Approximate Lat: 14 deg 57' S
Approximate Lon: 87 deg 36' E
Observing Ship/Sensor: Flinders Bay (39647)
Observor(s): M. Watts, First Officer; M. Trafford, Third Officer; M. Rigby, SMN; W. Loman, SMN
Description: Posn 14 deg 57'S, 87 deg 36'E. Times of observation between 2205-2315 GMT (21-9-82) 0405-0515 SMT (22-9-82) Air temp 22.5 deg (C) Dry 18.9 deg (C) wet, sea temperature 25.0 deg (C). Barometric Pressure 1014.4 mb (Corrected) 5/8 Cu Cloud. Close 129 deg (T) Speed 20 Kn. During the above times the vessel encountered an usual example of bioluminescence taking the form of "white" or "milky" water. The bioluminescence appeared ahead of the vessel. (Approximately One Mile) and its inital appearance was that of shallow mist stretching from the vessel to the horizon on either side. However once the vessel had entered the bioluminescence patch it became apparent as to the type of phenomenon we were witnessing. Upon entry into the bioluminescent area the radar was switched on but this made no apparent difference to the luminescence. Or to the general nature of the phenomeon. Nor did its appearance change noticeably during the duration of the observation. One very noteable feature was the appearance of the sky and clouds during the transit which prior to encountering the bioluminescence was relatively light, however once the sea surface became affected the sky and clouds appeared to be almost black in contrast with the water giving an indication as to the luminosity of the bioluminescence.
Reported In: Letter to Dr. Herring
Approx Location: Indian Ocean
Confidence In Sighting: High Confidence

1.341 Oman 1983

Observation Start Date: 09/08/1983
Observation Start Hour: 17:00 GMT
Observation End Date: 09/08/1983
Observation End Hour: (?)
Approximate Lat: 6 deg 28' N
Approximate Lon: 78 deg 20' E
Observing Ship/Sensor: MV Liverpool Bay (40726)
Observor(s): K. F. Hodson, Second Officer
Description: 0045Z: Ship's Pos'n 22 deg 10'N 60 deg 12'E - Report of Bioluminescence. A large area (about one mile in extent) of white water/milky sea was observed off the coast of Oman. This was preceeded by an area of patches expanding and contracting, varying in radius from 5 meters to 15 and moving in a Southerly Direction. Conditions - Air Temp 25.2 deg C - Wet Bulb 23.5 deg C - Clear Skis - Wind SW 4. Observer K.F. Hodson 2/O/D.
Reported In: Letter to Dr. Herring
Approx Location: Oman
Confidence In Sighting: High Confidence

1.342 Masirah Island 1984

Observation Start Date: 07/31/1984
Observation Start Hour: 22:00 LOC
Observation End Date: 08/01/1984
Observation End Hour: 00:00 LOC
Approximate Lat: 20 deg 30' N
Approximate Lon: 60 deg 00' E
Observing Ship/Sensor: (?)
Observor(s): Kris Kimmons, US Navy
Description: One night the surface of the sea was phosphorescing brilliantly enough you could read (barely) on the bridge. The extent of the phenomenon was from horizon to horizon. Of note, we were working with a pilot who reported he was seeing it from horizon to horizon as well at 1000 feet. (The sea surface) had a very diffused look. The spray (~15-20 kts blowing and ~3 foot chop) was phosphorescing as well so the surface looked like a soft fuzzy blanket. The light from the surace of the sea was brighter than full moonlight. The whole battle group was in the phosphorescent area. I went to bed and asked the other watch and they said it lasted pretty much the rest of the night.
Reported In: Miller et al. 2021
Approx Location: Masirah Island
Confidence In Sighting: High Confidence

1.343 Banda Sea 1984

Observation Start Date: 08/13/1984
Observation Start Hour: 22:00 LOC
Observation End Date: 08/13/1984
Observation End Hour: (?)
Approximate Lat: 5 deg 00' S
Approximate Lon: 129 deg 00' E
Observing Ship/Sensor: Australian Purpose
Observor(s): Master, 3rd Mate R. Lewry, 2nd Mate R. Matesworth, 1st Mate P B. Wallington-Beddoe
Description: 13-8-83 2200 hrs GMT V/L in Banda Sea off Kebulauan Is. Course 019 deg T+G Speed

12.2 knots. Observed following phenomena: Sky darker than sea. Ship stark + black against sea. Bow waves very faintly discernable. Entire sea an even milky colour. This phenomena lasted till an hour before daybreak on 14th 8 83 and was observed by Master, 3rd Mate R. Lewry, 2nd Mate R. Matesworth, 1st Mate P B. Wallington-Beddoe through each of their watches. Sky: Clear - O'Cast. Sea Conditions SE4 - SESE3. Air Temp 25 deg C - 23 deg C Wet Bulb 24 deg C - 22 deg C.
Reported In: Letter to Dr. Herring
Approx Location: Banda Sea
Confidence In Sighting: High Confidence

1.344 Arabian Sea 1984 A

Observation Start Date: 08/23/1984
Observation Start Hour: 16:25 GMT
Observation End Date: 08/23/1984
Observation End Hour: 16:40 GMT
Approximate Lat: 18 deg 40' N
Approximate Lon: 63 deg 45' E
Observing Ship/Sensor: MV Fort Rouge (42109)
Observor(s): Captain P Hill, C.B. Mawer, Third Officer, Mr. Guingab, Lookout
Description: 23rd August '84. Lat 18 deg 40' N, 63 deg 45' E. Air Temp 25.2 deg C, Barometer 1008.2 mb Corr'o Ships Course 317 deg True @ 15 KNOTS Dew Point Temp 23.1 deg C. Bioluminescence of the 'Milky Sea' type observed. Appeared on the horizon between 260 deg and 310 deg T (Approx). Moved towards and ship within 5 minutes of appearing on the horizon, was at the ship, 1625 GMT 2025 LMT. Initially bright it slowly faded in intensity as it passed the ship. By 1640 initial brightness gone. Bioluminescence from ship's bow wave fairly strong thru'out. Observers Capt. P Hill, 3rd Officer CB mawer and Lookout Mr. Guingab. The bioluminescence appeared to be heading in a direction of 220 deg T. There did not appear to be any individual luminous organisms.
Reported In: Letter to Dr. Herring
Approx Location: Arabian Sea
Confidence In Sighting: High Confidence

1.345 Arabian Sea 1984 B

Observation Start Date: 08/23/1984
Observation Start Hour: 18:20 GMT
Observation End Date: 08/23/1984
Observation End Hour: 19:40 GMT
Approximate Lat: 12 deg 21' N
Approximate Lon: 60 deg 47' E
Observing Ship/Sensor: MV Fort Carleton
Observor(s): 5 unnamed officers
Description: Following detail in connection with above, observed by Master Ch. Engineer, Radio Officer and 3 Deck officers totalling over 90 years of sea experiene. Arabia Sea Pos'n 12 21 N 60 47 E 2220 L/t (GMT+4) Air Temp 24C Wet 23C Dew Pt 23C Sea Temp Eng inlet 24C. Cloud 2/8 Wind SWxS Force 4/5 Slight of sea and Swell. No Moon. Visibility min 10 miles. "Whote visible sea area, horizon to horizon showing pure white and luminescence no reflected light. Ship appeared to be standing dark in a pure shite sheet, a glow over the whole area appearantly from below sea surface of 'neon' type light. No patches, no extra brilliance to low wave tops." Pos'n 10 10 N 61 17 E 0140 LT (GMT+5) Weather unchanged. Luminosity Ceased. This was an extraordinary display of light never before seen by any officer previously.

Reported In: Letter to Dr. Herring
Approx Location: Arabian Sea
Confidence In Sighting: High Confidence

1.346 Arabian Sea 1984 C

Observation Start Date: 08/29/1984
Observation Start Hour: 22:20 GMT
Observation End Date: 08/29/1984
Observation End Hour: (?)
Approximate Lat: 11 deg 53' N
Approximate Lon: 58 deg 56' E
Observing Ship/Sensor: Oriental Chief (Hong Kong Selected)
Observor(s): S. Bhola, Chief Officer, CJ Keen, Second Officer
Description: Port Kelang to Le Haure via Suez. Obs S Bhola C/O, CJ Keen 2/O. Thurs 30th August 1984 (local time). On the 29th of August at 2250 Z the vessel was in the Arabian Sea in approximate position 11 deg 53' N, 058 deg 56' E, preceeding on a course of 285 deg <T> at a speed of 19.5k. At about 2225 Z, a whitish glow was observed on the horizon and after 5 minutes steaming the ship was completely surrounded by a sea of a milky-white colour, which was emitting an even uniform glow similar to that of a flourescent strip light held just under the surface of the water. The intensity of the light produced by this bioluminescence was similar to that produced by a full moon on a clear night. Around the vessel patches of sea could be observed that were darker in color and no bioluminescence was present. The white colour of the sea could be broken up by the vessel's bow wave. After a further 10 minutes streaming, the vessel was...
Reported In: Letter to Dr. Herring
Approx Location: Arabian Sea
Confidence In Sighting: High Confidence

1.347 Arabian Sea 1984 D

Observation Start Date: 09/01/1984
Observation Start Hour: 19:15 GMT
Observation End Date: 09/01/1984
Observation End Hour: 19:45 GMT
Approximate Lat: 10 deg 41' N
Approximate Lon: 62 deg 08' E
Observing Ship/Sensor: MV Cardigan Bay (41900)
Observor(s): I. M. Hill, Second Officer, I Thomas, Cadet
Description: September 1st 1984 1915Z. O.R. Position 10 deg 41' N 62 deg 08' E. Observers: I. M. Hill 2/O N. I. Thomas CAD N. The while sea was seen to glow a pale luminous white. It was similar in appearance to a calm sea under a full moon. The sea state was approximately 5 on the Beaufort Scale and the sky was clear with no moon! The wind was from the southwest and the sea temperature was 25.5 deg C. It was thought that the luminosity was not instigated by the ship itself as the phenomena was seen well ahead of the vessel. The phenomena lasted approximately 30 mins.
Reported In: Letter to Dr. Herring
Approx Location: Arabian Sea
Confidence In Sighting: High Confidence

1.348 Pero 1985

Observation Start Date: 04/13/1985
Observation Start Hour: 03:00 GMT
Observation End Date: 04/13/1985
Observation End Hour: 05:00 GMT
Approximate Lat: 6 deg 00' S
Approximate Lon: 81 deg 20' W
Observing Ship/Sensor: MV Andes (43445)
Observor(s): T.J. Suelgoo, Third Mate, H. Barton, Master
Description: Saturday 13th April 1985. All times local, Zone GMT -5 hrs. v/c proceeding northwards at 18 kts off the coast of Peru in the region of Pta Falsa. 2200: pos 6 deg 09'S 81 deg 14' W, v/c entered area of heavy bioluminescence, turning the sea a milky colour extending to the horizon westwards. The edge of the area was very well defined and its direction approx. 060 deg (T) / 240 deg (T). The bow wave and water down the ship's side, where disturbed, glowed a very bright green, not speckled, but solid color. 2230: pos 6 deg 02' S 81 deg 17' W, the bioluminescence began to thin so that the milky colouration of the sea became patchy and the green glow produced, speckled. 2330: pos 5 deg 43' S 81 deg 21' W, the bioluminescence had by now thickened to the same extent as the original (2200) observation. 2400: pos 5 deg 33' S 81 deg 22' W, the milky colouration was by now completely gone and the effects of bioluminescence reduced to the normal occasional speckling of the ship's bow wave.
Reported In: Letter to Dr. Herring
Approx Location: Pero
Confidence In Sighting: High Confidence

1.349 Arabian Sea 1985 A

Observation Start Date: 08/15/1985
Observation Start Hour: 15:00 GMT
Observation End Date: 08/15/0195
Observation End Hour: 17:00 GMT
Approximate Lat: 10 deg 42' N
Approximate Lon: 62 deg 48' E
Observing Ship/Sensor: MV City of Edinburgh
Observor(s): R. Basford, First Officer, J. Banks SGIA
Description: 15th August 1985 Position 10 deg 42' N 62 deg 48' E (Arabian Sea) on passage from Suez to Port Kelant. Course 106 deg, Speed 19 kts. Between the hours of 1500-1700Z, the vessel passed through an extensive area of bioluminescence believed to be the form 'white water.' The phenomenon was first observed by the first officer (Mr. R. Basford) who summoned the Chief Officer for a second opinion. The phenomenon was subsequently observed by 14 officers of all ranks and although 'white water' is believed to be common in the area, none of the observing officers had seen it before. The white water took the form of a constant milky white glow covering the entire sea surface, and was sufficient to illuminate the undersides of the small amounts of cumulus present at the time. Had the horizon not been clearly visible the white water could have been mistaken for a type of fog. Visibility was in fact excellent, confirmed by radar and visual observation of a ship 10 miles away. A sample of the water was taken by rubber bucket, but attempts to stimulate the same bioluminescence reaction in a glass by stirring and shaking met without success. The sea temperature was 26.3 deg C and the air temperature was 26.9 deg C. The wind was southwesterly force 3 having abated in the previous 4 hours from a force 6. Initial Observers: R. Basford 1/o, J. Banks SGIA
Reported In: Letter to Dr. Herring
Approx Location: Arabian Sea
Confidence In Sighting: High Confidence

1.350 Arabian Sea 1985 B

Observation Start Date: 08/17/1985
Observation Start Hour: 17:10 GMT
Observation End Date: 08/17/1985
Observation End Hour: 17:30 GMT
Approximate Lat: 10 deg 00' N
Approximate Lon: 62 deg 00' E
Observing Ship/Sensor: MV Port Vancouver
Observor(s): R. J. Pease, M. J. Clark
Description: 17th August 1985. Time: 1710 z ~ 1730 z (GMT + 05h LMT). Locality: Arabian Sea, Latitude 10 deg N, Longitude 62 deg E/ As prevalent in the Arabain Sea during this time of year, in the above period of approximately twenty minutes, the phenomena of bioluminescence was observed at a very high intensity and thereafter for four to five hours, gradually decreasing in intensity. During the above period the whole sea surface to the hoirzon was observed as a uniform, brilliant white glow, similar to what is recognized as a "milky sea." To note in particular, just prior to this twenty period, the sea surface showed no indication of bioluminescence of any type, and the rate at which its appearance changed contrast from dark to a brilliant white was only a period of several seconds.
Reported In: Letter to Dr. Herring
Approx Location: Arabian Sea
Confidence In Sighting: High Confidence

1.351 Arabian Sea 1985 C

Observation Start Date: 08/18/1985
Observation Start Hour: 00:00 GMT
Observation End Date: 08/18/1985
Observation End Hour: (?)
Approximate Lat: 22 deg 30' N
Approximate Lon: 60 deg 00' E
Observing Ship/Sensor: MV Staffordshire (43571)
Observor(s): G. Fenry, Chief Officer, A. Molposs, Second Officer
Description: Korea to Arabian Gulf 0000Z 18th August 1985. Details as Per Observation - Obs G Fenry C/O and A Molposs 2/O. While on passage through the Arabian Sea in the Ras al Hadd Area, Milky Sea Bioluminescence was observed. The air smelt of fish and the air temperature was noticably cool, the 2/O mistook the phenomena as sea smoke, which in fact it looked like. (Possibly the luminescence in the air above the sea surface mentioned in Met 0887). The entire surface of the sea was glowing as though lit from beneath and uniformally Milk White as per the Marine Observer Handbook (Met 0887). The v/hs wake and wash showed no increase in brightness. The sea appeared calm but the wind speed was estimated at 12 knots. No large sealife was observed. On leaving the area of 'white water' a very marked contrast was noted between said white water and black normal colour, the line being very nearlt straight with some distortion - (The bioluminescence appeared to cover the entire sea surface horizon to horizon.)
Reported In: Letter to Dr. Herring
Approx Location: Arabian Sea
Confidence In Sighting: High Confidence

1.352 Tasman Sea 1985

Observation Start Date: 12/10/1985
Observation Start Hour: 11:00 GMT

Observation End Date: 12/10/1985
Observation End Hour: (?)
Approximate Lat: 34 deg 16' S
Approximate Lon: 162 deg 26' E
Observing Ship/Sensor: MV Willowbank (43552)
Observor(s): K. P. Mowat, Third Officer
Description: 10th December 1985 / 1100 Z / 2200 LMT Bioluminescence in Tasman Sea. The initial observation was of 'speckles' running along the ship's side and in the bow waves, these appeared to be caused by the direct disturbance of the water by the vessel. This was observed for several minutes before the vessel entered an area of 'patchy', seemingly 'milky sea', where the water emitted a diffuse glow. It was noticed that the wind was blowing the luminescence in 'slicks' which could be seen to be qutie distant from the ship. Although unable to gauge how extensive the phenomena was, it appeared to stretch half-way to the horizon, and certainty did not appear to be triggered by the ship's movement, as the area of phenomena could be seen approaching and then disappearing astern. The ship's sea track caused quite a distinctive glowing wake and the 'speckles and patches' which were first observed, continued through the encounter and for several mintues after. It was interesting to note that the local speckled luminescence was quite sharp and distinct to the eye as opposed to the more remote 'milky/patchy' sea phenomena which produced an even diffuse glow in the surface water. Posn: 34 deg 16.5' S, 162 deg 26.0' E. Wind N'ly 5: Air temp: 19.3 deg C, Sea Temp: 19.0 deg C, Light rain at the time, radar operating.
Reported In: Letter to Dr. Herring
Approx Location: Tasman Sea
Confidence In Sighting: High Confidence

1.353 Arabian Sea 1986

Observation Start Date: 08/13/1986
Observation Start Hour: 21:30 GMT
Observation End Date: 08/13/1986
Observation End Hour: 21:45 GMT
Approximate Lat: 12 deg 47' N
Approximate Lon: 61 deg 56' E
Observing Ship/Sensor: MV W. A. Mather (44478)
Observor(s): H.N. Niblock, Second Officer
Description: 13.8.86 at 2130 GMT (Local Time: 14 0130HRS). Observer: H.R. Niblock 2nd Off. Jeddah to Botany Bay. Posn 12 deg 47' N, 61 deg 56' E. For a period of about 15 mins the entire sea surface took on an intense white glow which was not unlike viewing the negative of a photograph. Brighter patches were visible at random which was probably due to sea and swell waves breaking on the surface. Bioluminescence had been visible on brief occasions over the past two nights/mornings but not as spectacular as this viewing. It stopped as abruptly as it had started with its accompanying odour of marine life being taken with it. Met Conditions: No cloud, wind SSW 6, sea: rough, swell: heavy SW'ly, Barometer: 1005.8, sea temp: 26 deg, air temp 25 deg, dew point temp: 22.6 deg
Reported In: Letter to Dr. Herring
Approx Location: Arabian Sea
Confidence In Sighting: High Confidence

1.354 Christmas Island 1986

Observation Start Date: 09/05/1986
Observation Start Hour: 17:20 GMT

Observation End Date: 09/05/1985
Observation End Hour: 18:00 GMT
Approximate Lat: 15 deg 11' S
Approximate Lon: 107 deg 42' E
Observing Ship/Sensor: Cape Hawke (Australian Selected)
Observor(s): (?)
Description: Fremantle towards Christmas Is. 5/9/86 1720-1800Z Extensive area of bioluminescence observed extending from vessel to horizon through 360 deg. Sea has 'milky white' character of uniform brilliance. Posn 15 deg 11' S 107 deg 42' E. Dry bulb 25 deg, wet 19.3 deg, barom 1016.5, wind SExS 5
Reported In: Letter to Dr. Herring
Approx Location: Christmas Island
Confidence In Sighting: High Confidence

1.355 Oman 1986

Observation Start Date: 09/28/1986
Observation Start Hour: 21:00 GMT
Observation End Date: 09/28/1986
Observation End Hour: 22:00 GMT
Approximate Lat: 22 deg 30' N
Approximate Lon: 60 deg 00' E
Observing Ship/Sensor: Atlantic City (45025)
Observor(s): John D. Murrary, Second Officer
Description: 28th September 1986 2100Z (290100LT) Intense white bioluminescence was observed while rounding 'Ras Al Hadd.' Southbound at a distance of 10 miles. The north/south extent of the bioluminescence was approximately 12 miles. It's east/west extent being indeterminable. Sea temperature dropped 7 deg C to 23 deg C during the one hour period of observation. The sky was clear with no moon. Wind was from the SSW at 30 knots. Sighted by John D. Murrary 2/O.
Reported In: Letter to Dr. Herring
Approx Location: Oman
Confidence In Sighting: High Confidence

1.356 Socotra 1987

Observation Start Date: 01/30/1987
Observation Start Hour: 20:30 GMT
Observation End Date: 01/30/1987
Observation End Hour: 21:10 GMT
Approximate Lat: 11 deg 23' N
Approximate Lon: 55 deg 05' E
Observing Ship/Sensor: MV Cardigan Bay (44846)
Observor(s): K.S. Hardy, Second Officer
Description: Lat 11 deg 23' N, 55 deg 05' E. Co 281 deg (T) Sp 19 kts. Wind NE 4. Temps 24 deg C (dry), 22.2 deg (wet), sea 23.28 deg. 30th January 1987. At 2030 Z (0030 LT) the horizon to the north and west appeared to have a low bank of white cloud on it. After a few minutes it was realized this was not the case and was infact a difference in the colour of the water. The sky was cloudless and with no moon. As the vessel entered the area of discolored water it appeared light grey in colour. there was no phosphorescent glow observed but the disturbed water close to the vessel had the appearance of being lit from below rather like a diffused white light. The phenomena lasted approximately 40 minutes gradually fading until gone. Observer: K. S. Hardy 2/0/N

Reported In: Letter to Dr. Herring
Approx Location: Socotra
Confidence In Sighting: High Confidence

1.357 North Atlantic 1988

Observation Start Date: 05/17/1988
Observation Start Hour: 22:45 GMT
Observation End Date: 05/17/1988
Observation End Hour: 23:00 GMT
Approximate Lat: 37 deg 34' N
Approximate Lon: 24 deg 22' W
Observing Ship/Sensor: MV Etrema (46321)
Observor(s): J.R. Wildson, Third Officer
Description: 2245 Z 17th May 1988 North Atlantic APPROX 40' EAST OF SAN MIGUEL IN AZORES IN POSITION 37 deg 34' N 24 deg 22' W. The 'white water' was first seen in large shapes, as in diagram, it resembled the wake of a ship but where was no change in the state of the sea surface. An aldis lamp was shone on the shapes but this has no effect in increasing their luminescence. At no time was their colour green, however they a denser white at the 'front' of the shape. A constant stream of shapes appeared with about 30 sec to 1 minute between passed. Occasionally one appeared longer and about 1 metre wide. The phenomenon lasted about 15 mins. Weather: Dry clear night, Wind: SE 3, SEA: slight, SWELL: low-moderate, average length, CLOUD: 2/8, TEMPS: dry 16.7 C, wet 16.0, sea 17.0
Reported In: Letter to Dr. Herring
Approx Location: North Atlantic
Confidence In Sighting: Very Low Confidence

1.358 East Caribbean 1989

Observation Start Date: 02/01/1989
Observation Start Hour: 16:10 GMT
Observation End Date: 02/01/1989
Observation End Hour: (?)
Approximate Lat: 16 deg 52' N
Approximate Lon: 57 deg 30' W
Observing Ship/Sensor: British Resolution (47181)
Observor(s): R. Sablay, Watchman, K. Kitchen, Chief Officer
Description: Date 1st Feb 89, GMT 1610 hrs Ships Co 205 deg Spd 14.0 knots. Wind ExS force 3. Temp 24.2 C Dewpoint 21.6 deg Bar 1016.5 Dark night, no cloud, no moon, bright stars. The colour of the sea all around the horizon turned gradually to a milky white, this lasted for about 20 mins, then returned to normal over a period of about 15 mins. About 10 mins later the phenomena occurred again, but this time did not go as pale as previously and lasted only for about 5 mins. Observed by R. Sablay (Watchman), K. Kitchen (CH.OFF)
Reported In: Letter to Dr. Herring
Approx Location: East Caribbean
Confidence In Sighting: High Confidence

1.359 Arabian Sea 1989

Observation Start Date: 09/03/1989
Observation Start Hour: (?)
Observation End Date: 09/03/1989
Observation End Hour: (?)
Approximate Lat: 12 deg 03' N
Approximate Lon: 57 deg 55' E
Observing Ship/Sensor: MV Isocardia (47937)
Observor(s): J.S. Mercer, Second Officer; M. Gooderham, Third Officer; D. Austin, Cadet; N. Hiscock, G. I.
Description: 2045Z 3/8/89. Lat 12 deg 03'N, 57 deg 55'E. Vessel passed through an apparent area of bioluminescence from horizon to horizon. The sea had a marked lighter appearance than the sky, almost a "snow scene" look about it. The sky was clear (cloudless) No moon. Wind SxE - 2/3. Sea slight - Swell low, Air Temp 25 deg C, Sea Temp 25 deg C. After approximately 10 minutes a "definate line" could be seen as the vessel cleared the area and the sea returned to its normal appearance. Depth of water in excess of 2000 meters. Course 105 deg (T). Speed 16 knots. At 2100Z (0100 LT) vessel entered a similar area which was cleared 20 minutes later. in neither area was there any increase in the appearance of the wake or bow wave of the vessel.
Reported In: Letter to Dr. Herring
Approx Location: Arabian Sea
Confidence In Sighting: High Confidence

1.360 Seychelles 1990

Observation Start Date: 05/30/1990
Observation Start Hour: (?)
Observation End Date: 06/01/1990
Observation End Hour: (?)
Approximate Lat: 4 deg 00' S
Approximate Lon: 54 deg 00' E
Observing Ship/Sensor: (?)
Observor(s): Thomas Evanoff, CDR US Navy
Description: (The Milky Sea) went on for miles. It was so bright I could read my notebook while standing on the bridge wing. At the time, I was the ship's navigator and happened to have the deck watch that night. It was so unusual, I remember calling the Captain and having some crewman come up from below deck to observe. The observation was near the Equator, well east of Africa in the Indian Ocean, during transit to/from port visit in the Seychelles
Reported In: Miller et al. 2021
Approx Location: Seychelles
Confidence In Sighting: High Confidence

1.361 Arabian Sea 1990

Observation Start Date: 08/15/1990
Observation Start Hour: 16:00 GMT
Observation End Date: 08/15/1990
Observation End Hour: 16:10 GMT
Approximate Lat: 10 deg 01' N
Approximate Lon: 63 deg 34' E
Observing Ship/Sensor: Antwerpen (48820)

Observor(s): Verspreet Y., Third Officer
Description: Date 15-08-1990; GMT: 16.00 till 16.10 Area of Marine Bioluminescence. - From Position L 10 deg 01'N g 063 deg 34'E to L 10 deg 00'N g 063 deg 36.6'E An area of marine bioluminescence was crossed by MV "Antwerpen". - In the center of the area, a diffused green-white light was observable all around, from ship to horizon. The intensity of the light was the same in all directions; - When leaving the area (pos 10 deg 00N; 063 deg 36.6'E) the intensity of the light became weaker but in a surrounding area of app. 20 m around the hull rapid green light flashes were observed. - Temp of sea water (bucket) 27.2 deg C; Wind WSW Force 4; State of sea; 4
Reported In: Letter to Dr. Herring
Approx Location: Arabian Sea
Confidence In Sighting: High Confidence

1.362 Arabian Sea 1990

Observation Start Date: 08/18/1990
Observation Start Hour: 16:40 GMT
Observation End Date: 08/18/1990
Observation End Hour: (?)
Approximate Lat: 10 deg 08' N
Approximate Lon: 60 deg 12' E
Observing Ship/Sensor: MV Benalder (48644)
Observor(s): F.G.J. Anderson, Captain; S. Polson, First Officer; D. Walker, Seaman Grade One; R.J. Shepherd, R/O
Description: 1640 Z (2140 ships time) Posn 10 deg 08'N 60 deg 12'E. The sea's surface was noticed to have a white appearance which at first was thought to be low lying fog. This was disproved when shining a light to the sea surface gave no noticeable increase in lume. The phenomum extended to the horizon in all directions and was bright enough to make the ship's foredeck and the sky appear much darker than the sea. Appearance and disappearance was gradual appart from an area of normal sea which was passed about 5 minutes before the phenomunum disappeared at 1725Z. Posn 10 deg 13'N 59 deg 56'E. With refernce to the marine observers handbook it was identified as "Milky Sea' which other than one sighting (MV City of Edinburgh approx Aug/Sept 1985) Few crewmembers had seen before. Weather at time: Temp 24.8/26.2, Baro 1009.4, Wind WSW F-6, Sky clear, no moon, rough bow sea and moderate swell. Sea temp 26.2 C (by sea bucket)
Reported In: Letter to Dr. Herring
Approx Location: Arabian Sea
Confidence In Sighting: High Confidence

1.363 Gulf of Aden 1990

Observation Start Date: 08/23/1990
Observation Start Hour: 17:00 GMT
Observation End Date: 08/23/1990
Observation End Hour: (?)
Approximate Lat: 12 deg 25.3' N
Approximate Lon: 43 deg 44.9' E
Observing Ship/Sensor: MV Peninsular Bay (48757)
Observor(s): K.P. Irelany, Second Officer; D. Foster, N. CDT; G. Macleod, SMS
Description: 23rd August 1990 1700 GMT. GPS Position 12 deg 25.3'N, 43 deg 44.9'E. Ships course 110 deg (T) Speed 23.5 kts. Strong marine bioluminescence sighted around vessel initially in the form of bright green flashes and later patches of "milky sea" observed at approx 1-2 nmls in raidius. Wake astern

had a steady "milky sea" appearince for about 1.5 nmls. Visibility was good and cloud cover 2/8 low. V/L altered course to 092 deg (T) at 1736 GMT and bioluminescence noticeably decreased in intensity and "milky sea" patches became sporadic.
Reported In: Letter to Dr. Herring
Approx Location: Gulf of Aden
Confidence In Sighting: High Confidence

1.364 Arafura Sea 1991

Observation Start Date: 08/01/1991
Observation Start Hour: (?)
Observation End Date: 08/01/1991
Observation End Hour: (?)
Approximate Lat: 10 deg 00' S
Approximate Lon: 135 deg 00' E
Observing Ship/Sensor: Windy Thoughts
Observor(s): Joyce Green, Private Mariner; Don Green, Private Mariner
Description: Suddenly, my senses were overcome with the most astounding sight! The sea was alive with a vast bright green glow of bioluminescence that was often experienced in the boat's wake---but this was an enitrely new phenomenon. Windy Thoughts sailed into a sea that was literally alight from horizon to horizon with a bright luminous green glow as far as the eye could see. Amazingly, the sky around us was aglow as well. All was dead quiet, the wind and seas calmed considerably. And yet our speed increased as Windy Thoughts sailed along in silence, not a sound of a wave breaking on her hull, not even the sound of the bow wave as she cut through the water---and not a whisper of wind was heard. It was surreal.
Reported In: Miller et al. 2021
Approx Location: Arafura Sea
Confidence In Sighting: High Confidence

1.365 Banda Sea 1992

Observation Start Date: 07/27/1992
Observation Start Hour: 00:00 LOC
Observation End Date: 07/29/1992
Observation End Hour: (?)
Approximate Lat: 7 deg 30' S
Approximate Lon: 129 deg 00' E
Observing Ship/Sensor: (?)
Observor(s): Terry Cosgrove, Private Mariner
Description: (During the) midnight to 4 AM watch the sea was glowing with a milky grey light which reflected off the cloud cover giving an illusion of being in a fog where there was no horizon - the fact that the sea was quite lumpy (2 to 2.5 meter swell which we couldn't see, only feel) made the whole experience quite surreal. This happened over two nights on the third night the luminescence was still there but only very faintly.
Reported In: Miller et al. 2021
Approx Location: Banda Sea
Confidence In Sighting: High Confidence

1.366 North Pacific 1993

Observation Start Date: 11/07/1993
Observation Start Hour: 04:50 UNK
Observation End Date: 11/07/1993
Observation End Hour: (?)
Approximate Lat: 11 deg 38' N
Approximate Lon: 93 deg 48' W
Observing Ship/Sensor: MV Pacific Teal
Observor(s): P. J. Mahoney, Third Officer
Description: 7 November 1993. At 0450 whilst the vessel was on a course of 283 deg at a speed of 15 knots, a dull-white glow was observed in the water at a distance of about 4 cables off the port bow. As the vessel drew closer the glow took the form as shown in the sketch whilst another isolated patch of luminescence about 5 m across was seen a little further ahead of the maina rea. The sighting was the subject of much discussion but eventually it was concluded that the 'entity' was merely an ususal form of bioluminescence. At the time of the observation the wind was light and variable, there were frequent rain showers and occasional sheet lightning. Positio of ship: 11 deg 38'N, 93 deg 48'W.
Reported In: Mar. Obs. 1994, 10, Vol LXIV, no 326
Approx Location: North Pacific
Confidence In Sighting: Low Confidence

1.367 Arabian Sea 1994

Observation Start Date: 01/15/1994
Observation Start Hour: 19:00 GMT
Observation End Date: 01/15/1994
Observation End Hour: 20:20 GMT
Approximate Lat: 17 deg 02' N
Approximate Lon: 62 deg 56' E
Observing Ship/Sensor: Staffordshire (52050)
Observor(s): F. Martin, Captain; Mr. D.I. Mackinnon, Second Mate; Mr. A. Mackellan, Third Mate; Mr. Vilbruel, Lookout
Description: 15th January 1994 at 1900Z, the sea all around the vessel extending to the horizon took on a dull, light milky colour which stood out from the relatively darker sky, and hull of the ship. It became so pronounced that the horizon was clearly seen. It diminished for a short while until a thin band all around the horizon was all that was notably bright, but returned to its original intensity after about 5 mins. A sample was taken of water at the time. Shaking and shining a light at the sample produced no reaction. Obseved in the sample through magnifying glass were small specks and longer "stringy" objects. Temp of the sample 24.8 deg C. The phenomenon was barely visible at 2015Z and had disappeared by 2020Z. Course 339 deg (T), speed 17 knots. Cloud = 1, Air temp 23 deg C, Sea temp 24.8 deg C, wind NE, Fce 3, Atmos . Press. 1012.6 mb, visibility 15'
Reported In: Letter to Dr. Herring
Approx Location: Arabian Sea
Confidence In Sighting: High Confidence

1.368 Strait of Hormuz 1994

Observation Start Date: 03/30/1994
Observation Start Hour: 15:40 GMT
Observation End Date: 03/30/1994
Observation End Hour: 16:40 GMT

Approximate Lat: 26 deg 30' N
Approximate Lon: 55 deg 57' E
Observing Ship/Sensor: Limnea (52329)
Observor(s): Unnamed Third Officer and J. Calbraith, Captain
Description: Report: At 1940 LMT 3/O and Master observed the slow growth of bioluminescence. It took approximately 30 minutes to grow from nothing to full intensity. Once the bioluminescence reached full intensity the horizon was totally overwhelmed and no visible horizon was visible at any point for the next 20/30 minutes. The bioluminescence took no form that anyone had ever seen trying to describe the type of luminescense is very hard to describe. As the swell rose and fell, the bioluminescence had the same [????] as the swell. [Drawing of two waves out of phase such that the peaks of one align with the troughs of the other] Apparent view from the sea level the swell waves also approxiamte colour of bioluminescenes. The bioluminescence appeared to well up from the sea. The master took a sample of the sea using the sea bucket, and once the bucket was clear of the sea the bioluminescence died and faded into nothing. At the time of maximum intensity, the bioluminescence was so bright that no other waves could be seen. It then took thirty minutes for the bioluminescence to fade to dark. The sea then took on a totally normal appearance. Later during the night a bioluminescence trail was left by the vessel.
Reported In: Letter to Dr. Herring
Approx Location: Strait of Hormuz
Confidence In Sighting: High Confidence

1.369 Java 1994 A

Observation Start Date: 07/03/1994
Observation Start Hour: 14:20 GMT
Observation End Date: 07/03/1994
Observation End Hour: 15:18 GMT
Approximate Lat: 09 deg 33' S
Approximate Lon: 113 deg 32' E
Observing Ship/Sensor: Equinox VPIK
Observor(s): N. Young, Third Officer; R. Stevens, E.R.S.; J. Duffy, Fourth Engineer; A. Rodrigo, Quartermaster; R. Watkinson, Third Engineer; J. Scott, Second Officer
Description: 3.7.94. Indian Ocean. Lat 09 33S 113 32E. Wind Lt SELY. Barometer 1014.s (steady). Temp 25.5 deg C. Swell SW 1 1/2 m. No clouds, No moon. Co 253 deg T Speed 12 knots. 1420 to 1435Z Sea temperature 27 deg C. V/L appeared to be in a milky white sea as far as the eye could see and what was presumed as dolphins swimming nearby left brilliant blue and white trails. The intensity of the white lit the V/L's decks up as if artifical light had been switched on; this phenomena lasted 15 minutes before fading away as quickly as arrived. Observer: N. Young 3/Off R. Stevens E.R.S. J. Duffy 4/ENG A. Rodrigo Q.M. 3.7.94 Indian Ocean Lat 09 35S 113 25E Conditions as above 1510 to 1518Z. This phenomena appeared once again though for a shorter period in this period the milky white sea had patches of brilliant blue as if water inside a coral reef so intense was the light V/L's decks were lit up as if ship's deck lights had been switched on and every detail of the V/L's decks was prominently visible. Observer N. Young 3/off A. Rodrigo Q.M. R. Watkinson 3/ENG J. Scott 2/off
Reported In: Letter to Dr. Herring
Approx Location: Java
Confidence In Sighting: High Confidence

1.370 Sri Lanka 1994

Observation Start Date: 08/03/1994
Observation Start Hour: 17:50 GMT
Observation End Date: 08/03/1994
Observation End Hour: (?)
Approximate Lat: 06 deg 21' N
Approximate Lon: 78 deg 00' E
Observing Ship/Sensor: Oriental Bay (52169)
Observor(s): B. Graham, Master; M. Graham, MAS; D. King, Navigation Cadet; J. Wright. SM1
Description: Wednesday 3rd August 1994 1750 GMT Ships Posn 06 deg 21'N 78 deg 00'E. An extremely large patch of bioluminescence was encountered which first of all seemingly thought to large fishng fleet. The was was about nine to ten miles across and was approximately 5 miles deep in thick patches. It was observed that it carried on in a north-westerly direction. The luminescence was stretched EAST-WEST by the wind which was approx westerly force 4, and was extremely bright in nature. On studying the narine observers handbook it was determined it could be one of two types: (a) the diffused white light, which may give enough light to read by, or to illuminate clouds which is called "white water" or "milky sea". The even glow is thought to be light from marine organisms of microscopic size. (b) The upwelling of subsurface water, breaking into vivid luminosity at the surface.
Reported In: Letter to Dr. Herring
Approx Location: Sri Lanka
Confidence In Sighting: High Confidence

1.371 Java 1994 B

Observation Start Date: 08/18/1994
Observation Start Hour: 03:15 UNK
Observation End Date: 08/18/1994
Observation End Hour: 05:10 UNK
Approximate Lat: 9 deg 10.8' S
Approximate Lon: 105 deg 29.5' E
Observing Ship/Sensor: Gordon Reid
Observor(s): D. Prochester, Second Officer; P. Hardy, Chief Officer; N. Glover, Able Seaman
Description: At 0315 in position 9 deg 10.8'S 105 deg 29.5'E a waxing gibbous moon descended on the western horizon. As the light from moonset faded the ocean itself began to reveal an eerie milky glow. The intensity gradually increased, the entire sea soon appearing as a brilliant white/blue, luminous, ground glass emitting its own magnificent almost etheral radiance. Within 20 minutes an uncanny inversion had taken place, the sky appearing black against the luminous bright white of the sea; wash and wake became invisible and the sea had noticably quietened, although wind speed had non substantially changed. At this time wind ESE force 4 (~ 13 kts), barometer 1012.3 mb and temp 23.5 deg C/22.0 deg C. From about 0450 miky glow slowly lessened, then with first visibly twilight at 0510 abruptly disappeared. Bow and stern waves again became visible and the sea was again dark against the lightening sky. At this time wind ESE force 3 (~7 kts), Temp 24 deg C/22 deg C with a noticable rise of 0.5-1.0 mb in barometric pressure (sea accompanyuing sheet) at beginning of morning twilight and the end of milky sea. (0510 position 9 deg 30.0'S 105 deg 32.4'E).
Reported In: Letter to Dr. Herring
Approx Location: Java
Confidence In Sighting: High Confidence

1.372 Somalia/Socotra 1994

Observation Start Date: 09/08/1994
Observation Start Hour: 17:40 GMT
Observation End Date: 09/08/1994
Observation End Hour: (?)
Approximate Lat: 11 deg 58.8' N
Approximate Lon: 58 deg 47.2' E
Observing Ship/Sensor: Oriental Bay
Observor(s): (?)
Description: Phenomena - Luminous Mist. Temperature: 26.6 deg C Dry; 25.0 deg C Wet; 24.3 deg C D.P. Barometric Pressure 1011.2 mb. obs: CAPT A.P. Talboy, 3.O.N. M. Haynes, S.M.1. A. Jones. Ships Pons 11 deg 58.8'N 58 deg 47.2'E. Course and speed 106 deg (T) at 22.0 knots. Time 2140 LT 1740Z. Cloud cover 6/8. Wind SSW 2. Visibility 10 nautical miles. Ambient Light: Nil. Prior to making the observed it was assumed that lights from the ship were giving the grey-green appearance to the haze just above the surface of the sea. However, due to the S.W. monsoon the sea had been rough for several days and the wind was up to that time about force 6. A further observation was made from the port side to ensure that the sidelight was not making a colour change that side, and sure enough it was still a luminous grey-green glow all around the ship for as far as the eye could see. Just to make double sure it was not light from the ship, I turned off all extermall accommodation lighting except the navigation lgihts and the glow remained. I called the captain who also remarked that he had never experienced this phenomena before. the opinion was that it looked like a vast area covered by underwater lights, similar to a swimming pool however no standard bioluminescence had been seen before the obs, and one at the time either. At the end of the watch the effect was still there but weakening, and it was of the opinion of the bridge team that we had entered the "Twilight Zone".
Reported In: Letter to Dr. Herring
Approx Location: Somalia/Socotra
Confidence In Sighting: High Confidence

1.373 Somalia/Socotra 1995

Observation Start Date: 01/25/1995
Observation Start Hour: 18:00 GMT
Observation End Date: 01/25/1995
Observation End Hour: (?)
Approximate Lat: 8 deg 1.3' N
Approximate Lon: 52 deg 45.4' E
Observing Ship/Sensor: SS Lima
Observor(s): S.M.F. Masud, OOW; S. Thompson, OOW; S. Samiran, Cadet; M.A. Sultan, Cadet; A. Ahmad, Cadet; P. Cumberbatch, G2; Mrs. B. M. Briand.
Description: 25th January 1995 at 1800Z. Course: 207T. Speed; 13.2 kts. Visibiltity Excellent (18 miles). Wind NE'ly. Force 4. Barometer. 1014mb (w/o corr'n.). Temperatures: dry bulb 25.5C, wetbulb:22.5C. Sea:26.5C. At position: Lat:08 01.3N Long; 052 45.4E. On a clear blue sky night no moon, 150 miles east of somalian coast, a whitish glow was observed on the horizon and after 15 minutes teaming the ship was completely surrounded by a sea of milky white colour with fairly uniform luminescence. The bioluminescence appeared to cover the entire sea surface, horizon to horizon above the surface. Appeared as if sailing over a field of snow or gliding over the clouds. There was no damping effect on capillary waves or reduction of visibility at all. No mist at deck level although at distance it appeared either low lying mist or the upwelling of luminescence itself. The bow waves and the wake appeared blackish, the thick black patches of oil slicks were passing by, later the aldis lamp revealed that the patches were actually the light green kelp, amazingly appeared black in the white waters. (Unable to collect the sample). On close examination of the water sample by magnifying glass, many single

cell milky jelly fish like micro organism was observed some of them were large enough to be detected by naked eye. However there was no luminescence as such. One very tiny shrimp like crustacean was also found about 3mm long. The sample is retained, but we are afraid we havn't got any preservtives onboard. There was no significant change in temperatures or weather during the six hours after which the luminescence gradually disappeared as the moon rose.
Reported In: Letter to Dr. Herring
Approx Location: Somalia/Socotra
Confidence In Sighting: High Confidence

1.374 Arabian Sea 1995

Observation Start Date: 01/25/1995
Observation Start Hour: (?)
Observation End Date: 01/27/1995
Observation End Hour: (?)
Approximate Lat: 07 deg 00' N
Approximate Lon: 52 deg 00' E
Observing Ship/Sensor: DMSP OLS
Observor(s): Miller et al. 2005
Description: [Satellite observed event.]
Reported In: Miller et al. 2005
Approx Location: Arabian Sea
Confidence In Sighting: High Confidence

1.375 Banda Sea 1995

Observation Start Date: 07/18/1995
Observation Start Hour: 20:00 LOC
Observation End Date: 07/19/1995
Observation End Hour: 00:50 LOC
Approximate Lat: 5 deg 49.62' S
Approximate Lon: 128 deg 37.68' E
Observing Ship/Sensor: Annie's Song
Observor(s): Stuart Yellen, Private Mariner; Ann Yellen, Private Mariner
Description: At around 2000 local time (...) we sailed into a totally white sea. It extended as far as we could see and the glow reflected up into the sky, obscuring the horizon. Even the sails were hard to distinguish. Porpoises swimming by were black shapes in the water. The brightness and the disorienting nature of the experience was very tiring on our eyes. It had disappeared by 0050 July 19. It wasn't as though we left it behind but that the white light was gradually turned off. We went from white to normal black in about 15 minutes.
Reported In: Miller et al. 2021
Approx Location: Banda Sea
Confidence In Sighting: High Confidence

1.376 North Pacific 1996

Observation Start Date: 05/12/1996
Observation Start Hour: 18:00 GMT
Observation End Date: 05/12/1996
Observation End Hour: (?)

Approximate Lat: 22 deg 29.2' N
Approximate Lon: 123 deg 22.7' E
Observing Ship/Sensor: MV Peninsular Bay
Observor(s): S. Frediani, Third Officer
Description: 12 May 1996. At 1800 UTC whilst the vessel was on a heading of 041 deg at 22 knots luminescence was observed in the form of large milky or steaky patches 5-10 m wide and 2-3 m long. It was so intense at times that it affected the Lookout's night vision. On closer inspection, it was discovered that the milky patches had an orange tint to them which led to the conclusion that they contained large shoals of krill which were feeding on plankton. Also present was a strong smell similar to freshly-cut grass left on the compost heap for a few days. The phenomenon persisted throughout the hours of darkness until daybreak, the display showing the greatest quantity and intensity ever seen by the observer. Luminescence was present throughout the leg of the voyage from Pusan to Japan and was even seen in the Japanese ports of Kobe, Nagoya and Yokohama but the luminosity was not as intense when compared with the earlier observation. At the time of the first sighting the sea temperature was 18.5 deg and the wind was NNE'ly, force 1-2. Position of ship: 22 deg 29.2'N, 123 deg 22.7'E. [Possibly Ostracods being preyed upon by krill.]
Reported In: Mar. Obs. 1997, 04, Vol LXVII, no 336
Approx Location: North Pacific
Confidence In Sighting: Low Confidence

1.377 Arabian Sea 1996

Observation Start Date: 08/16/1996
Observation Start Hour: (?)
Observation End Date: 08/16/1996
Observation End Hour: (?)
Approximate Lat: 11 deg 35' N
Approximate Lon: 60 deg 07' E
Observing Ship/Sensor: MV Shenzen Bay (53965)
Observor(s): D. Cropley, Third Officer; P. McGennan, Watchman
Description: 16-8-96 Posn 11 deg 35'N 60 deg 07'E Colombo to Suez Canal. Course 286 deg T x 20.0 knots. Wind WSW7. During the evening 8-12 watch, after sunset the vessel entered a patch of ocean which was far less rough than the surrounding area. (Although the wind was constant). The whole area displayed a bright off white light (Almost milky in colour) and it appeared to be from horizon to horizon. Our first guess was a low mist, but the wind strength did not support this. Bioluminescence came to mind next and then was agreed upon between myself and my watchman. However the distrubed wake of the vessel was darker than that which surrounded the vessel, which was bright enough to cause a very defined silhouette of the ship and carge and almost bright enough to read by. The general area was bright for about 25 mins (8 1/2 miles) and then darkened slightly for 10 minutes before the vessel left the phenomena.
Reported In: Letter to Dr. Herring
Approx Location: Arabian Sea
Confidence In Sighting: High Confidence

1.378 Banda Sea 1997 A

Observation Start Date: 09/02/1997
Observation Start Hour: 15:00 GMT
Observation End Date: 09/02/1997
Observation End Hour: 19:00 GMT

Approximate Lat: 0 deg 42.5' S
Approximate Lon: 126 deg 35.2' E
Observing Ship/Sensor: SS Northwest Snipe
Observor(s): Francis Burgess, Second Mate; Robert Watson, Watchkeeping Integrated Rating
Description: 02/1500Z September 1997 3/m Craig Andrews hand over navigation watch reporting a apparent presence of a glow within the surrounding water of the vessel. This noticeably lighter than usual condition was observed. (By myself 2/mate Francis Burgess and watch keeping Integrated Rating Robert Watson) to increase in intensity from a dull 'aurora' to a clearly distinguishable glow over a period of 4 hrs. This phenomena was observed in the southern sections of the Malucca Sea V/L's position at 02/1500Z Lat 00 deg 42.5'S, Long: 126 deg 35.2'E (by G.P.S.). Course: 178 deg (T). AV Speed: 16.0 kts. Weather conditions: Air Temp: 25.0 deg C. Sea Conditions: Slight. Wind: SexS @ Force 4 (11 kts). Wet Bulb Temp: 22.5 deg C. Swell Conditions: Nil. Cloud: Nil. Water Temp: 26.1 deg C (via seawater inake temp gauges). Light Present: Nil (no moon; stars + planet Jupiter only). Visibility: 99 (Determined by sighting TG Dehekono Light). Barometric PressureL 1013.7 mb (corrected). Ships draft: (mean) 9.19 meters. 02/1900Z Lat: 01 deg 47.8'S Long 126 deg 37.6'E (by G.P.S.). Course 178 deg (T). At Speed 16.0 kts. Bioluminescence was observed to na[??]. Disappeared by this positio. The dispersal was noted to be gradual, 1st reducing to a clearly defined ridge (similar appearance as to an on coming fog bank.) Then into large patches. Breaking down to narrow bands w the troughts of the small developing swell (height approx 0.2-0.4 meters). Then, after a short period the bioluminescence dispersed completely. @ Point of complete dispersal (approx 02/1900Z). Weather Conditions were: Air Temp: 24.5 deg C. Wet Bulb: 22.5 deg C. Water Temp 26.1 deg C. Visbility: 99. Sea Conditions: Calm. Wind: SE x S @ Force 2 (4.0 kts). Swell: southerly @ 0.2 meters. Cloud: Nil. Light: Presence Nil (No Moon! Stars and planet Jupiter only). Barometric Pressure: 1013.5 mb (corrected). * Note The only conditions that were noted to change were: 1 Wind Speed: This decreased from 11.0 kts to 4.0 kts (direction remained constant). 2. Swell: Initially Nil increasing to approx 0.2 meters (estimate!). 3. Sea water Temperature @ 02/1900 Z = 26.1 deg C. 02/2000Z 25.8 deg C. 02/2100 Z = 25.9 deg C. 02/2200Z = 26.1 deg C. 2000Z-2100Z also brightest/most brilliant period. 4. Sea: Initially slight changing to calm. 5. Barometric Pressure: 1013.7 mb reduced to 1013.5 mb. Description: The entire sea visible T[????] an off-white/opaque colour. The presence of the bioluminescence gave an appearance which resembled a sea of milk or cloud. The effect was distinguishable to the extent that the normal appearance of a dark sea and lighter sky was reversed to give a 'luminous sea' and a dark sky. Also the ships wake and distrubed water up to approx 1 meter from the ship's side was noticed to be slightly more luminous than the rest of the sea (as if the vessel was passing through a continuous sea of phosphorescence.) All this gave an intriguing appearance, as if a high intensity search light was emmitting its bean upwards from the sea bottom. Illuminating the sea water as it would normally illuminate clouds (however, once clear of the sea surface the light no nlonger illuminated the medium of air.). Additional Comment: This is now the 4th time I have observed this phenomena on board this vessel over 3 years. Previously this has occurred in the southern or middle section of the Banda Sea Area similar conditions prevailing but the intensity of the bioluminescence varied from a brilliant white (almost gloss white) to a dirty off white. Previously it was assumed that this was a well documented phenomena which we now notice is not the case. Hence we weill in future report all cases. Plase note: No photographs are possible as safety policy aboard prevent use of cameras on deck.
Reported In: Letter to Dr. Kay
Approx Location: Banda Sea
Confidence In Sighting: High Confidence

1.379 Banda Sea 1997 B

Observation Start Date: 09/10/1997
Observation Start Hour: 13:00 GMT
Observation End Date: 09/10/1997

Observation End Hour: (?)
Approximate Lat: 0 deg 35' S
Approximate Lon: 126 deg 41' E
Observing Ship/Sensor: SS Northwest Shearwater
Observor(s): B. M. Mahon
Description: Bioluminescence - Approx 1305Z utc 9/10/97 Sea around V/L gives off a 'Milky White Light" throughout 360 deg Stretching to the horizon. Visbility 9. Air temp 27.5 deg C Sea Temp 26.6 deg C. Pos'n 00 deg 35'S 126 deg 41'E.
Reported In: Letter to Dr. Herring
Approx Location: Banda Sea
Confidence In Sighting: High Confidence

1.380 Java 1997

Observation Start Date: 10/04/1997
Observation Start Hour: 14:00 GMT
Observation End Date: 10/04/1997
Observation End Hour: (?)
Approximate Lat: 10 deg 58' S
Approximate Lon: 106 deg 28' E
Observing Ship/Sensor: SS Moreton Bay (54938)
Observor(s): J. E. Barnaby, Third Officer; B.V. Pearson, SMS; G.B. Wilson, SMS; R.P. McKenna, [???]
Description: 1400Z/04-10-97. Around posn 10 deg 58'S 106 deg 28'E. Course 342 deg. Speed 18 kts. Voyage from Fremantle toward Singapore. Lond[?] weak glow observed at first centered on around 000 deg spanning approx 30 deg of horizon. This quietly spread over the while ahead when it was was noticed that the sea directly beside the vessel had taken on a "smoky" appearance. Within 2 minutes the sea had turned a brilliant white. This lasted for approximately 15 minutes before gradually fading through grey to normal. Upon consultation with local pilot book it was determined that this was shoal bioluminescence which is more commonly observed further North during August normally.
Reported In: Letter to Dr. Herring
Approx Location: Java
Confidence In Sighting: High Confidence

1.381 Cocos Islands 1998

Observation Start Date: 03/07/1998
Observation Start Hour: (?)
Observation End Date: 03/08/1998
Observation End Hour: (?)
Approximate Lat: 10 deg 48' N
Approximate Lon: 97 deg 54' E
Observing Ship/Sensor: (?)
Observor(s): Robert Cogen, Private Mariner
Description: On 7 March, 1998 we were sailing through the Mergui Archipelago. We stopped in the late afternoon in the Southeast Bay of Clara Island. We had seen considerable bioluminescence the night before in the Salet Galet at the western end of Lampi Island, but on 7 March it was pervasive, white, and continuous to the horizon after dark. The following night at Black Rock, 97 degrees 35' East and 11 degrees 22' North we saw it again.
Reported In: Miller et al. 2021

Approx Location: Cocos Islands
Confidence In Sighting: High Confidence

1.382 Central America 1999

Observation Start Date: 07/15/1999
Observation Start Hour: (?)
Observation End Date: 07/15/1999
Observation End Hour: (?)
Approximate Lat: 12 deg 00' N
Approximate Lon: 91 deg 30' W
Observing Ship/Sensor: Chase
Observor(s): Chris Nolan, Captain US Coast Guard
Description: In 1999, when I served as a cadet in the eastern Pacific, the coast guard cutter Chase sailed through an entire glowing surface of bioluminescence. The ocean as far as you could see, looked like there were dive lights underneath the ship, shining up. Steady, greenish-white water. We steamed through for maybe twenty or thirty minutes. Two huge pools of it. My only memory at this point is a flat calm sea, motoring to the north and for a good 20 minutes. Definitely not normal bioluminescence...it was solid to the horizon.
Reported In: Miller et al. 2021
Approx Location: Central America
Confidence In Sighting: High Confidence

1.383 Yemen 2000

Observation Start Date: 02/24/2000
Observation Start Hour: (?)
Observation End Date: 02/25/2000
Observation End Hour: (?)
Approximate Lat: 14 deg 30' N
Approximate Lon: 50 deg 00' E
Observing Ship/Sensor: (?)
Observor(s): Bjorn Endresen, Private Mariner; Merete Askvik, Private Mariner
Description: I (Bjorn) was heading southeast on my way from Salalah, Oman to Al Mukallah, Yemen. One night we encountered the milky sea. (Merete) saw it first - she was on watch - and her initial thought was that the boat had caught fire on the inside, in the forepeak - and that the fire somehow lit up the ocean. It was not ordinary bioluminescence - I grew up in Norway and had seen that thousands of times before -- it was a white, light, glowing ocean around us as far as we could see. The phenomenon didn't last very long, maybe an hour or two if I recall correctly. We definitely sailed into it. We also sailed out of it - the light didn't go out, it wasn't dawn, we just left the area where the ocean was lit. We do not remember any dark wake. I think we would have remembered it if we had seen it- as it would have been the opposite of most "normal" bioluminescence, where the wake is glowing. I have sailed about 35,000 miles and have only seen it that one time.
Reported In: Miller et al. 2021
Approx Location: Yemen
Confidence In Sighting: High Confidence

1.384 Socotra 2001

Observation Start Date: 01/28/2001
Observation Start Hour: 23:20 GMT
Observation End Date: 01/29/2001
Observation End Hour: 00:05 GMT
Approximate Lat: 11 deg 02' N
Approximate Lon: 55 deg 13' E
Observing Ship/Sensor: MV British Pioneer (57076)
Observor(s): M. Graaskov, Second Officer; E. Angala, Ordinary Seaman
Description: Marine Bioluminescence in the form of 'Milky Sea' observed between positions 10 deg 50'N 055 deg 08' E and 11 deg 02'N 055 deg 13'E. At height of phenomenon in position 10 deg 56'N 055 deg 11'E the sea around the vessel on all sides and to the horizon had a white glow which lit up the sky and reflected off the low clouds. At the time of observation the wind was force 7, but white horses could not be seen due to the intensity of the bioluminescence. Visibility was excellent at time, another vessels lights were observed 19 miles away.
Reported In: Letter to Dr. Herring
Approx Location: Socotra
Confidence In Sighting: High Confidence

1.385 India 2002

Observation Start Date: 02/11/2002
Observation Start Hour: 21:00 LOC
Observation End Date: 02/12/2002
Observation End Hour: 00:00 LOC
Approximate Lat: 8 deg 21' N
Approximate Lon: 71 deg 54' E
Observing Ship/Sensor: (?)
Observor(s): Tony Johnson, Private Mariner
Description: I came up out of the cabin to take a look around a couple of nights before making landfall in Oman, and the whole sea was white, from horizon to horizon. It was a dark night and it was hard to tell what you were looking at, but it seemed as though the boat was flying gently on the top of a clous. (Others) also made out dark shadows moving in the water, which (they) figured were fish.
Reported In: Miller at al. 2021
Approx Location: India
Confidence In Sighting: High Confidence

1.386 Arabian Sea 2002

Observation Start Date: 02/13/2002
Observation Start Hour: 16:00 GMT
Observation End Date: 02/13/2002
Observation End Hour: (?)
Approximate Lat: 17 deg 14' N
Approximate Lon: 57 deg 51' E
Observing Ship/Sensor: British Purpose (57676)
Observor(s): H. Cromie, Chief Officer; C. Nesbit, Third Officer; K. Peacock, Master
Description: Off the coast of Oman - vessel on a course 024 deg (T). Passed through some strange phenomena in which sea surface appeared very light/dense, almost milky in colour stretching all around to the horizon. It was a pitch black night, little cloud cover, no moon present, little starlight. Weather

conditions @ time of observation - sea temp 25 deg C, air temp 23 deg C, DEWPT 21 deg, Pressure 1016 mb. Wind ENE force 3/4. the observation lasted 50 mins, when the concentration began to fade. (H Cromie C/O; C. Nesbit 3/O; K. Peacock, Master).
Reported In: Letter to Dr. Herring
Approx Location: Arabian Sea
Confidence In Sighting: High Confidence

1.387 East Pacific 2002

Observation Start Date: 05/08/2002
Observation Start Hour: 04:00 LOC
Observation End Date: 05/08/2002
Observation End Hour: 06:00 LOC
Approximate Lat: 7 deg 43.668' N
Approximate Lon: 115 deg 36.522' W
Observing Ship/Sensor: (?)
Observor(s): Jeff Bowers, Private Mariner
Description: We sailed for half an hour through (a milky sea). I was on watch, and during a routine check was alarmed to see white water ahead. As we approached, it was apparent that the seas were just illuminated; there was no breaking water or reef. We sailed for half an hour with white water for as far as I could see. Later we sailed out of it, with a line of white water behind.
Reported In: Miller et al. 2021
Approx Location: East Pacific
Confidence In Sighting: High Confidence

1.388 Grand Comoro Island 2002

Observation Start Date: 07/08/2002
Observation Start Hour: 19:00 GMT
Observation End Date: 07/08/2002
Observation End Hour: 22:30 GMT
Approximate Lat: 9 deg 39.5' S
Approximate Lon: 44 deg 16.4' E
Observing Ship/Sensor: Copiapo (57837)
Observor(s): M.P.I.R. Perera, Second Officer; W.S.P. Wegrasinane, Third Officer
Description: 8th July 2002. At 1800 hrs utc whilst in position 09 deg 39.5' S, 44 deg 16.4' E (120nm NNE off Grand Comoro Island) on a heading of 020 deg at 16 kts, bioluminescence was observed all around the ship as a form of constant white glow "milkey sea", no flashes were seen when waves broke on the surface. At the time of observation the sky was 3/8 cloudy, wind was SSE'ly force 4 and sea temperature was 24.5 deg C. It was a dark night with no moon, whole sea was glowed white horion was clearly visible and low clouds were seen clearly from the glow of the sea. After 3 1/2 hours the luminescence were faded.
Reported In: Letter to Dr. Herring
Approx Location: Grand Comoro Island
Confidence In Sighting: High Confidence

1.389 Banda Sea 2002

Observation Start Date: 07/21/2002
Observation Start Hour: 20:00 GMT

Observation End Date: 07/21/2002
Observation End Hour: 21:00 GMT
Approximate Lat: 5 deg 55.7' S
Approximate Lon: 125 deg 30.7' E
Observing Ship/Sensor: SS Northwest Stormpetrel
Observor(s): Michael Deer, Chief Officer; Rob Hutchinson, Integrated Rating; Ray Vinn, Chief Steward; Chris Daly, Chief Cook
Description: During the 4-8 watch this morning 21st July 2002 2000Z 0500ST the vessel entered an area of bioluminescence that covered the sea surface out to all points on the hoirzon. The glow from the luminescence was uniform all over with black patches formed down the ship's side due to the bow wave. Throughout the period before sunrise from when first observed the intensity of the glow increased up to approximately 2045Z from this time when it started to dim and become patchy. At approximately 2100Z the ship left the area affected with a distinct line apparent astern of the ship. The weather conditions for the period were as follows: Wind ExN force 2; Cloud 0/8; Barometer 1013.0 steady; Dry bulb 26 degrees C; Wet bulb 23 degrees C; Sea temperature 26.8 degrees C; No moon.
Reported In: Letter to Dr. Herring
Approx Location: Banda Sea
Confidence In Sighting: High Confidence

1.390 Gulf of Aden 2002

Observation Start Date: 09/15/2002
Observation Start Hour: (?)
Observation End Date: 09/15/2002
Observation End Hour: (?)
Approximate Lat: 13 deg 00' N
Approximate Lon: 52 deg 00' E
Observing Ship/Sensor: (?)
Observor(s): Thomas Evanoff, CDR US Navy
Description: Two observations between Sep-Nov 2002. One occurred in the Gulf of Aden/Arabian Sea area. The other was in the Gulf of Oman/Persian Gulf Area. These were not as bright, or cover as large an area as the 1990 event, but they did go on for several miles.
Reported In: Miller et al. 2021
Approx Location: Gulf of Aden
Confidence In Sighting: High Confidence

1.391 Persian Gulf 2002

Observation Start Date: 11/15/2002
Observation Start Hour: (?)
Observation End Date: 11/15/2002
Observation End Hour: (?)
Approximate Lat: 26 deg 30' N
Approximate Lon: 56 deg 36' N
Observing Ship/Sensor: (?)
Observor(s): Thomas Evanoff, CDR US Navy
Description: Two observations between Sep-Nov 2002. One occurred in the Gulf of Aden/Arabian Sea area. The other was in the Gulf of Oman/Persian Gulf Area. These were not as bright, or cover as large an area as the 1990 event, but they did go on for several miles.
Reported In: Miller et al. 2021

Approx Location: Persian Gulf
Confidence In Sighting: High Confidence

1.392 Oman 2003

Observation Start Date: 03/06/2003
Observation Start Hour: 15:00 GMT
Observation End Date: 03/06/2003
Observation End Hour: (?)
Approximate Lat: 25 deg 26' N
Approximate Lon: 57 deg 34' E
Observing Ship/Sensor: MV Al Zohal 1
Observor(s): Steven P. Harris, Master, Rahat U. Ahmed, Third Officer, N. Wijesinghe, Able Seaman
Description: March 03: Vessel observed bioluminescence on 6th March '03 at GMT 1500 HRS to 1715 HRS. Position bounded by Lat 25 deg 26'N LONG 057 deg 30'E to lat 25 deg 58'N LONG 057 deg 00'E. Vessel was en route from Davao, Phillippines to Sharjah, U.A.E. proceeding on a course 310 deg (T), speed 18.5 knots in GULF of OMAN. It was rippled seas and SE'ly low short swells, clear skies with moon light, visibility moderate due to hazy horizon while proceeding a "Milky Sea" constant even white glow observed as well as some scattered white patches
Reported In: Letter to Dr. Herring
Approx Location: Oman
Confidence In Sighting: High Confidence

1.393 Arabian Sea 2010

Observation Start Date: 08/11/2010
Observation Start Hour: 22:00 LOC
Observation End Date: 08/12/2010
Observation End Hour: 01:00 LOC
Approximate Lat: 14 deg 06' N
Approximate Lon: 65 deg 54' E
Observing Ship/Sensor: SV Mir
Observor(s): Sam Scott, Private Mariner; Abilgail Alling, Private Mariner
Description: (We) were on watch just after dinner, and for the previous few nights it had been pitch-dark during this time of our watch, but we couldn't help but notice that it was strangely light out. No moon, cloudy above, so no stars either, why did the world seem to be glowing? The light gradually grew stronger, and it became clear that it was coming from the water. The whole sea around us seemed to be thick and opaque like milk, and was emitting a greenish-blue light. This was not your typical bioluminescence that is little sparkles of light caused by disturbances in the water. This was a constant glow that stretched from horizon to horizon. Within this overwhelming glow would occasionally float past large (tubular) pieces of solid material that glowed even brighter than the rest, and when I attempted to catch them in a bucket or with a gaff hook they would just break apart like clumps of dirt. We floated in (this) sea for over three hours, and everyone was in disbelief at what we were seeing, and then suddenly we could see a line of black water ahead, and as quickly as it had started we passed out of (it), but for a little while still we could see an eerie glow behind us.
Reported In: Miller et al. 2021
Approx Location: Arabian Sea
Confidence In Sighting: High Confidence

1.394 Arabian Sea 2013

Observation Start Date: 07/31/2013
Observation Start Hour: 01:30 LOC
Observation End Date: 08/13/2013
Observation End Hour: 01:30 LOC
Approximate Lat: 15 deg 00' N
Approximate Lon: 58 deg 00' E
Observing Ship/Sensor: VIIRS DNB
Observor(s): Miller et al. 2021
Description: [Satellite observed event.]
Reported In: Miller et al. 2021
Approx Location: Arabian Sea
Confidence In Sighting: High Confidence

1.395 Banda Sea 2014

Observation Start Date: 08/20/2014
Observation Start Hour: 01:30 LOC
Observation End Date: 08/24/2014
Observation End Hour: 01:30 LOC
Approximate Lat: 05 deg 00' S
Approximate Lon: 126 deg 00' E
Observing Ship/Sensor: VIIRS DNB
Observor(s): Miller et al. 2021
Description: [Satellite observed event.]
Reported In: Miller et al. 2021
Approx Location: Banda Sea
Confidence In Sighting: High Confidence

1.396 Arabian Sea 2015 A

Observation Start Date: 01/15/2015
Observation Start Hour: 01:30 LOC
Observation End Date: 01/28/2015
Observation End Hour: 01:30 LOC
Approximate Lat: 00 deg 00' N
Approximate Lon: 44 deg 00' E
Observing Ship/Sensor: VIIRS DNB
Observor(s): Miller et al. 2021
Description: [Satellite observed event.]
Reported In: Miller et al. 2021
Approx Location: Arabian Sea
Confidence In Sighting: High Confidence

1.397 Arabian Sea 2015 B

Observation Start Date: 01/21/2015
Observation Start Hour: 01:30 LOC
Observation End Date: 01/26/2015

Observation End Hour: 01:30 LOC
Approximate Lat: 00 deg 00' N
Approximate Lon: 50 deg 00' E
Observing Ship/Sensor: VIIRS DNB
Observor(s): Miller et al. 2021
Description: [Satellite observed event.]
Reported In: Miller et al. 2021
Approx Location: Arabian Sea
Confidence In Sighting: High Confidence

1.398 Banda Sea 2015

Observation Start Date: 08/12/2015
Observation Start Hour: 01:30 LOC
Observation End Date: 08/18/2015
Observation End Hour: 01:30 LOC
Approximate Lat: 05 deg 00' S
Approximate Lon: 129 deg 00' E
Observing Ship/Sensor: VIIRS DNB
Observor(s): Miller et al. 2021
Description: [Satellite observed event.]
Reported In: Miller et al. 2021
Approx Location: Banda Sea
Confidence In Sighting: High Confidence

1.399 Arabian Sea 2015 C

Observation Start Date: 09/07/2015
Observation Start Hour: 01:30 LOC
Observation End Date: 09/11/2015
Observation End Hour: 01:30 LOC
Approximate Lat: 10 deg 00' N
Approximate Lon: 53 deg 00' E
Observing Ship/Sensor: VIIRS DNB
Observor(s): Miller et al. 2021
Description: [Satellite observed event.]
Reported In: Miller et al. 2021
Approx Location: Arabian Sea
Confidence In Sighting: High Confidence

1.400 Arabian Sea 2015 D

Observation Start Date: 09/12/2015
Observation Start Hour: 01:30 LOC
Observation End Date: 09/20/2015
Observation End Hour: 01:30 LOC
Approximate Lat: 11 deg 00' N
Approximate Lon: 52 deg 00' E
Observing Ship/Sensor: VIIRS DNB
Observor(s): Miller et al. 2021

Description: [Satellite observed event.]
Reported In: Miller et al. 2021
Approx Location: Arabian Sea
Confidence In Sighting: High Confidence

1.401 Arabian Sea 2017

Observation Start Date: 01/21/2017
Observation Start Hour: 01:30 LOC
Observation End Date: 01/31/2017
Observation End Hour: 01:30 LOC
Approximate Lat: 02 deg 00' N
Approximate Lon: 47 deg 00' E
Observing Ship/Sensor: VIIRS DNB
Observor(s): Miller et al. 2021
Description: [Satellite observed event.]
Reported In: Miller et al. 2021
Approx Location: Arabian Sea
Confidence In Sighting: High Confidence

1.402 Socotra 2017

Observation Start Date: 07/16/2017
Observation Start Hour: 01:30 LOC
Observation End Date: 07/23/2017
Observation End Hour: 01:30 LOC
Approximate Lat: 11 deg 12' N
Approximate Lon: 55 deg 00' E
Observing Ship/Sensor: VIIRS DNB
Observor(s): Hudson and Miller 2024 A
Description: [Satellite observed event.]
Reported In: Hudson and Miller 2024 A
Approx Location: Socotra
Confidence In Sighting: High Confidence

1.403 Java 2017

Observation Start Date: 08/20/2017
Observation Start Hour: 01:30 LOC
Observation End Date: 08/26/2017
Observation End Hour: 01:30 LOC
Approximate Lat: 09 deg 00' S
Approximate Lon: 114 deg 00' E
Observing Ship/Sensor: VIIRS DNB
Observor(s): Hudson and Miller 2024 B
Description: [Satellite observed event.] [First ever predicted event.]
Reported In: Hudson and Miller 2024 B
Approx Location: Java
Confidence In Sighting: High Confidence

1.404 Banda Sea 2017

Observation Start Date: 08/21/2017
Observation Start Hour: 18:00 LOC
Observation End Date: 08/21/2017
Observation End Hour: 19:00 LOC
Approximate Lat: 01 deg 42' S
Approximate Lon: 123 deg 12' E
Observing Ship/Sensor: (?)
Observor(s): Abdul Hafid
Description: [This account is based on an interview done by the Biosphere Foundation's crew aboard the vessel Mir while visiting Dungkean, Indonesia in 2024 with local fishermen. The Biosphere foundation provided an english translation of the interview and that is what is inscribed here as well as an interview summary. The full interview can be found here: https://www.youtube.com/watch?v=gFCk-OnHViM] [Summary: Approximately 7 years ago, August, first time they saw something like this; while like milk at sea, as far as the light from the flashlight all he can see is white, No moon (in new moon), duration: 1 hour, 300 meters depth.] I want to share a particular experience I had near here while at sea. In between the peninsula and reef Merpati. It started around 6pm and I had already turned on the light on my boat. One of my friends was in the FAD (fish attracting device) a wooden raft with a hut build on top of it. One of my other friends was in the back of the boat while I was in the front. When my friend (on the back of the boat) stood up and went to pee, he noticed that the sea had turned completely white. Then he asked me "sir, what is this?" When I saw this, I stopped moving. The elders of the village say this type of activity is a 'Sea Ghost' and it can take on many different forms. They believe that these ghosts can be things such as: a solitary puffer fish, a giant octopus or a white ocean, etc. So when we saw the ocean had turned white we decided to just wait and stay still, after an hour the white had disappeared.
Reported In: Biosphere Foundation
Approx Location: Banda Sea
Confidence In Sighting: High Confidence

1.405 Arabian Sea 2018 A

Observation Start Date: 01/12/2018
Observation Start Hour: 01:30 LOC
Observation End Date: 01/19/2018
Observation End Hour: 01:30 LOC
Approximate Lat: 02 deg 00' N
Approximate Lon: 47 deg 00' E
Observing Ship/Sensor: VIIRS DNB
Observor(s): Miller et al. 2021
Description: [Satelllite observed event.]
Reported In: Miller et al. 2021
Approx Location: Arabian Sea
Confidence In Sighting: High Confidence

1.406 Arabian Sea 2018 B

Observation Start Date: 01/19/2018
Observation Start Hour: 01:30 LOC
Observation End Date: 01/24/2018
Observation End Hour: 01:30 LOC

Approximate Lat: 05 deg 00' N
Approximate Lon: 55 deg 00' E
Observing Ship/Sensor: VIIRS DNB
Observor(s): Miller et al. 2021
Description: [Satellite observed event.]
Reported In: Miller et al. 2021
Approx Location: Arabian Sea
Confidence In Sighting: High Confidence

1.407 Arabian Sea 2019

Observation Start Date: 01/28/2019
Observation Start Hour: 01:30 LOC
Observation End Date: 02/07/2019
Observation End Hour: 01:30 LOC
Approximate Lat: 02 deg 00' N
Approximate Lon: 50 deg 00' E
Observing Ship/Sensor: VIIRS DNB
Observor(s): Miller et al. 2021
Description: [Satellite observed event.]
Reported In: Miller et al. 2021
Approx Location: Arabian Sea
Confidence In Sighting: High Confidence

1.408 Java 2019 A

Observation Start Date: 07/25/2019
Observation Start Hour: 01:30 LOC
Observation End Date: 08/09/2019
Observation End Hour: 01:30 LOC
Approximate Lat: 09 deg 00' S
Approximate Lon: 110 deg 00' E
Observing Ship/Sensor: VIIRS DNB
Observor(s): Miller et al. 2021
Description: [Satellite observed event.]
Reported In: Miller et al. 2021
Approx Location: Java
Confidence In Sighting: High Confidence

1.409 Banda Sea 2019

Observation Start Date: 07/26/2019
Observation Start Hour: 01:30 LOC
Observation End Date: 08/04/2019
Observation End Hour: 01:30 LOC
Approximate Lat: 05 deg 00' S
Approximate Lon: 127 deg 00' E
Observing Ship/Sensor: VIIRS DNB
Observor(s): Miller et al. 2021
Description: [Satellite observed event.]

Reported In: Miller et al. 2021
Approx Location: Banda Sea
Confidence In Sighting: High Confidence

1.410 Java 2019 B

Observation Start Date: 08/25/2019
Observation Start Hour: 01:30 LOC
Observation End Date: 09/07/2019
Observation End Hour: 01:30 LOC
Approximate Lat: 09 deg 00' S
Approximate Lon: 110 deg 00' E
Observing Ship/Sensor: VIIRS DNB
Observor(s): Miller et al. 2021
Description: [Satellite observed event.]
Reported In: Miller et al. 2021
Approx Location: Java
Confidence In Sighting: High Confidence

1.411 Arabian Sea 2021 A

Observation Start Date: 01/07/2021
Observation Start Hour: 01:30 LOC
Observation End Date: 01/22/2021
Observation End Hour: 01:30 LOC
Approximate Lat: 11 deg 00' N
Approximate Lon: 58 deg 00' E
Observing Ship/Sensor: VIIRS DNB
Observor(s): Miller et al. 2021
Description: [Satellite observed event.]
Reported In: Miller et al. 2021
Approx Location: Arabian Sea
Confidence In Sighting: High Confidence

1.412 Arabian Sea 2021 B

Observation Start Date: 01/15/2021
Observation Start Hour: 01:30 LOC
Observation End Date: 01/18/2021
Observation End Hour: 01:30 LOC
Approximate Lat: 07 deg 00' N
Approximate Lon: 52 deg 00' E
Observing Ship/Sensor: VIIRS DNB
Observor(s): Miller et al. 2021
Description: [Satellite observed event.]
Reported In: Miller et al. 2021
Approx Location: Arabian Sea
Confidence In Sighting: High Confidence

1.413 Arabian Sea 2021 C

Observation Start Date: 02/07/2021
Observation Start Hour: 01:30 LOC
Observation End Date: 02/20/2021
Observation End Hour: 01:30 LOC
Approximate Lat: 08 deg 00' N
Approximate Lon: 56 deg 00' E
Observing Ship/Sensor: VIIRS DNB
Observor(s): Miller et al. 2021
Description: [Satellite observed event.]
Reported In: Miller et al. 2021
Approx Location: Arabian Sea
Confidence In Sighting: High Confidence

1.414 Arabian Sea 2023

Observation Start Date: 01/16/2023
Observation Start Hour: 01:30 LOC
Observation End Date: 01/30/2023
Observation End Hour: 01:30 LOC
Approximate Lat: 04 deg 00' N
Approximate Lon: 53 deg 00' E
Observing Ship/Sensor: VIIRS DNB
Observor(s): Hudson and Miller 2024 A
Description: [Satellite observed event.]
Reported In: Hudson and Miller 2024 A
Approx Location: Arabian Sea
Confidence In Sighting: High Confidence

1.415 Banda Sea 2023

Observation Start Date: 08/07/2023
Observation Start Hour: 01:30 LOC
Observation End Date: 08/15/2023
Observation End Hour: 01:30 LOC
Approximate Lat: 05 deg 00' S
Approximate Lon: 129 deg 30' E
Observing Ship/Sensor: VIIRS DNB
Observor(s): Hudson and Miller 2024 A
Description: [Satellite observed event.]
Reported In: Hudson and Miller 2024 A
Approx Location: Banda Sea
Confidence In Sighting: High Confidence