{{Starbox begin |

name=Sirius [http://simbad.u-strasbg.fr/simbad/sim-id?Ident=name+sirius+a A] / [http://simbad.u-strasbg.fr/simbad/sim-id?Ident=name+sirius+b B] }}

{{Starbox image |

image=[[Image:Position Alpha Cma.png|250px]] |

caption=天狼星的位置}}

{{Starbox observe |

epoch=[[J2000.0]] ([[International Celestial Reference System|ICRS]]) |

constell=[[Canis Major]] |

ra={{RA|06|45|08.9173}}<ref name=simbada>[http://simbad.u-strasbg.fr/simbad/sim-id?Ident=name+sirius+a Database entry for Sirius A], [[SIMBAD]]. Accessed online [[October 20]], [[2007]].</ref><ref name=cg /> |

dec={{DEC|&minus;16|42|58.017}}<ref name=simbada /><ref name=cg>Astrometric data, mirrored by SIMBAD from the [[Hipparcos]] catalogue, pertains to the center of mass of the Sirius system. See &sect;2.3.4, ''[http://www.rssd.esa.int/SA/HIPPARCOS/docs/vol1\_all.pdf Volume 1, The Hipparcos and Tycho Catalogues]'', European Space Agency, 1997, and the [http://vizier.u-strasbg.fr/viz-bin/VizieR-S?HIP%2032349 entry for Sirius] in the Hipparcos catalogue ([[Centre de Données astronomiques de Strasbourg|CDS]] ID [http://vizier.u-strasbg.fr/viz-bin/Cat?I/239 I/239].)</ref> |

appmag\_v=&minus;1.47 (A)<ref name=simbada /> / 8.30 (B)<ref name=wd42166>[http://vizier.u-strasbg.fr/viz-bin/VizieR-S?WD%200642-166 Entry for WD 0642-166], ''A Catalogue of Spectroscopically Identified White Dwarfs'' (August 2006 version), G. P. McCook and E. M. Sion ([[Centre de Données astronomiques de Strasbourg|CDS]] ID [http://vizier.u-strasbg.fr/viz-bin/Cat?III/235A III/235A].)</ref>

}}

{{Starbox character |

class=A1V (A)<ref name=simbada /> / [[White dwarf|DA2]] (B)<ref name=wd42166 />|

b-v=0.01 (A)<ref name=simbada /> / &minus;0.03 (B)<ref name=wd42166 />|

u-b=&minus;0.05 (A)<ref name=hr2491>[http://vizier.u-strasbg.fr/viz-bin/VizieR-S?HR%202491 Entry for HR 2491], ''Bright Star Catalogue, 5th Revised Ed. (Preliminary Version)'', D. Hoffleit and W. H. Warren, Jr., 1991. ([[Centre de Données astronomiques de Strasbourg|CDS]] ID [http://vizier.u-strasbg.fr/viz-bin/Cat?V/50 V/50].)</ref> / &minus;1.04 (B)<ref name=wd42166 />

}}

{{Starbox astrometry |

radial\_v=&minus;7.6<ref name=simbada /> |

prop\_mo\_ra=&minus;546.05<ref name=simbada /><ref name=cg /> |

prop\_mo\_dec=&minus;1223.14<ref name=simbada /><ref name=cg /> |

parallax=379.21 | parallax\_footnote=<ref name=simbada /> |

p\_error=1.58 |

absmag\_v=1.42 (A)<ref name=co>For apparent magnitude ''m'' and parallax ''π'', the absolute magnitude ''M<sub>v</sub>'' of Sirius A is given by:

:<math>\begin{smallmatrix}M\_v\ =\ m + 5 (\log\_{10} {\pi} + 1)\ =\ -1.47 + 5 (\log\_{10}{0.37921} + 1)\ =\ 1.42\end{smallmatrix}</math>

See: {{cite book

| first=Roger John | last=Tayler | year=1994

| title=The Stars: Their Structure and Evolution

| publisher=Cambridge University Press

| pages=16 | isbn=0521458854 }}</ref> / 11.18 (B)<ref name=wd42166 />}}

{{Starbox visbin

| reference=<ref name="gatewood">{{cite journal

| first=G. D.

| last=Gatewood

| coauthors=Gatewood, C. V.

| title=A study of Sirius

| journal=The Astrophysical Journal | year=1978

| volume=225 | pages=191–197

| url=http://adsabs.harvard.edu/cgi-bin/bib\_query?1978ApJ...225..191G

| doi=10.1086/156480 }} (p. 195.)</ref>

| name=α CMa B

| period=50.09

| axis=7.56

| eccentricity=0.592

| inclination=136.5

| node=44.6

| periastron=1894.13

| periarg=147.3 }}

{{Starbox detail |

| metal=[Fe/H]&nbsp;=0.50<ref name="apj548">{{cite journal

| last=Qiu | first=H. M.

| coauthors=Zhao, G.; Chen, Y. Q.; Li, Z. W.

| title=The Abundance Patterns of Sirius and Vega

| journal=The Astrophysical Journal,

| year=2001 | volume=548 | pages=953–965

| url=http://www.journals.uchicago.edu/doi/full/10.1086/319000

| accessdate=2007-10-20

| doi=10.1086/319000

}}</ref> (A)

| mass=2.02<ref name="apj\_630">{{cite journal

| first=J. | last=Liebert

| coauthors=Young, P. A.; Arnett, D.; Holberg, J. B.; Williams, K. A.

| title=The Age and Progenitor Mass of Sirius B

| journal=The Astrophysical Journal | year=2005 | volume=630

| issue=1 | pages=L69–L72

| url=http://adsabs.harvard.edu/abs/2005ApJ...630L..69L

| doi=10.1086/462419 }}</ref> (A) /<br />0.978<ref name="apj\_630" /> (B)|

radius=1.711<ref name="apj\_630" /> (A) /<br />0.0084 ± 3%<ref name="apj\_497">{{cite journal

| last=Holberg | first=J. B.

| coauthors=Barstow, M. A.; Bruhweiler, F. C.; Cruise, A. M.; Penny, A. J.

| title=Sirius B: A New, More Accurate View

| journal=The Astrophysical Journal | year=1998 | volume=497

| pages=935–942

| url=http://www.journals.uchicago.edu/doi/full/10.1086/305489

| doi=10.1086/305489}}</ref> (B)|

rotation=16 km/s<ref name="aaa407">{{cite journal

| last=Kervella | first=P.

| coauthors=Thevenin, F.; Morel, P.; Borde, P.; Di Folco, E.

| title=The interferometric diameter and internal structure of Sirius A

| journal=Astronomy and Astrophysics

| url=http://arxiv.org/pdf/astro-ph/0306604

| accessdate=2007-11-25

| year=2003 | volume=407 | pages=681–688

| doi=10.1051/0004-6361:20030994 }}</ref> (A)

| luminosity=25.4<ref name="apj\_630" /> (A) /<br />0.026<ref>From L=4πR<sup>2</sup>σT<sub>eff</sub><sup>4</sup>. See: {{cite book

| first=Roger John | last=Tayler | year=1994

| title=The Stars: Their Structure and Evolution

| publisher=Cambridge University Press

| pages=16 | isbn=0521458854 }}</ref> (B)

| temperature=9,940<ref name="iau224">{{cite conference

| first = Saul J. | last = Adelman

| title =The Physical Properties of normal A stars

| booktitle =Proceedings of the International Astronomical Union

| pages =1-11 | publisher =Cambridge University Press

| date= July 8-13, 2004 | location =Poprad, Slovakia

| url =http://adsabs.harvard.edu/abs/2004IAUS..224....1A

| accessdate = 2007-07-03 }}</ref> (A) /<br />25,200<ref name="apj\_630" /> (B)

| age=2-3 &times; 10<sup>8</sup><ref name="apj\_630" />

| gravity=4.33<ref name="iau224" /> (A)/8.57<ref name="apj\_497" /> (B) }}

{{Starbox catalog |

names='''System''': α Canis Majoris, α CMa, 9 Canis Majoris, 9 CMa, [[Henry Draper catalogue|HD]] 48915, [[Harvard Revised catalogue|HR]] 2491, [[Bonner Durchmusterung|BD]] -16°1591, [[General Catalogue of Trigonometric Parallaxes|GCTP]] 1577.00 A/B, [[Gliese-Jahreiss catalogue|GJ]] 244 A/B, [[Luyten Half-Second catalogue|LHS]] 219, ADS 5423, LTT 2638, [[Hipparcos catalogue|HIP]] 32349. <br />'''B''': EGGR 49, WD 0642-166.<ref name=simbada /><ref name=simbadb">[http://simbad.u-strasbg.fr/simbad/sim-id?Ident=name+sirius+b Database entry for Sirius B], [[SIMBAD]]. Accessed on line [[October 23]], [[2007]].</ref><ref>''General Catalogue of Trigonometric Stellar Parallaxes, Fourth Edition'', W. F. van Altena, J. T. Lee, and E. D. Hoffleit, ''Yale University Observatory'', 1995. ([[Centre de Données astronomiques de Strasbourg|CDS]] ID [http://vizier.u-strasbg.fr/viz-bin/Cat?I/238A I/238A].)</ref>}}

{{Starbox end}}

'''天狼星'''是夜空中[[恆星亮度列表|最亮的恆星]]，其[[視星等]]為-1.47，幾乎為第二亮恆星[[老人星]]的兩倍。它的英文名稱為Sirius，讀法為/<span title="Pronunciation in the International Phonetic Alphabet (IPA)" class="IPA">[[Help:Pronunciation|ˈsɪɹiəs]]</span>/,<ref>{{cite web

| url=http://dictionary.reference.com/browse/sirius

| title=sirius

| work=Dictionary.com Unabridged (v 1.1)

| publisher=Random House, Inc

| accessdate=2008-04-06

}}</ref>，源自[[古希臘語]]的Σείριος。<ref name=Liddell />天狼星根據[[巴耶恆星命名法]]的名稱為大犬座α星。我們肉眼以爲是一顆恆星的天狼星，實際上是一個[[雙星系統]]，其中包括一顆[[光譜型]]A1V的白[[主序星]]和另一顆光譜型DA2的暗[[白矮星]]伴星天狼星B。

天狼星如此之亮除了因爲其原本就很高的[[光度]]以外，還因爲它距離[[太陽]]很近。天狼星距離我們2.6[[秒差距]]（8.6[[光年]]），並是[[恆星距離列表|最近的恆星]]之一。天狼星A的質量為太陽的兩倍，而[[絕對星等]]為-1.42。它比太陽亮25倍<ref name="apj\_630" />，但光度明顯比其它亮星較暗，如對比老人星或[[參宿七]]。此雙星系統約有200到300萬年老，<ref name="apj\_630" />並且一開始是由兩顆藍色的亮星組成。更高質量的天狼星B耗盡了能源，成爲一顆[[紅巨星]]，然後又漸漸削去外層，約在120萬年前坍塌成爲今天的[[白矮星]]狀態。<ref name="apj\_630" />

中國古代星象學說中，天狼星是「主侵略之兆」的惡星。[[屈原]]在《[[九歌]]·[[東君]]》中寫到：「舉長矢兮射天狼」，以天狼星比擬位於[[楚國]]西北的[[秦國]]。[[蘇軾]]《[[江城子]]》中「會挽雕弓似滿月，西北望，射天狼」，以天狼星比擬威脅[[北宋]]西北邊境的[[西夏]]。在西方的文化裏，人們視其為狗。

==觀測歷史==

{| style="float: left; margin: 5px; border: 1px solid black;"

|- align="center"

|

<hiero>X1:N14-M44</hiero>

天狼星/索普代特的[[象形文字]]

|}

天狼星在最早的[[天文]]記錄中就已經出現，並被[[古埃及]]人視爲“索普代特”（[[希臘語]]：Sothis）。在[[中王國時代]]期間，埃及人的[[古埃及曆法|曆法]]開始于天狼星的[[偕日升]]那天，那天早晨，天狼星由於離太陽足夠遠，能比太陽更早升起，避開強光，在70天的消失之後重現天空。<ref name ="Holberg4to5">{{harvard citation|Holberg|2007|loc=pp. 4-5}}</ref>這一天在曆法中的重要性是因爲它也是[[尼羅河]]周期汎濫和[[至點|夏至]]之前不久。<ref>{{cite book

| first=Fred | last=Wendorf | coauthors=Schild, Romuald | year=2001 | title=Holocene Settlement of the Egyptian Sahara: Volume 1, The Archaeology of Nabta Plain | pages=p. 500 | publisher=Springer | isbn=0306466120 | url=http://books.google.com/books?id=qUk0GyDJRCoC&pg=PP1&dq=isbn:0306466120&sig=wDa9MW9Qy5f3BIvPvbDLc\_LMnJE#PPA500,M1 | format=Google Book Search preview | accessdate=2008-05-16 }}</ref> 索普代特的象形文字是一顆星星和一個三角形。天狼星消失在空中的70天，在神話中象徵著索普代特和[[艾西斯]]渡過埃及地府的日子。<ref name ="Holberg4to5"/>

古希臘人相信，天狼星的出現代表著干熱的夏天及所帶來的植物枯乾、男人軟弱和女人煩燥。<ref>{{harvard citation|Holberg|2007|loc=p. 19}}</ref>由於天狼星十分明亮，因此它在初夏的不穩定天氣下會閃爍的更厲害，表示了不好的事件將會發生。受到其效應牽連的人被稱爲患上“astroboletos”（αστροβολητος）或稱“star-struck”。在文字記載裏會被寫作“燃燒”或“火焰”。<ref>{{harvard citation|Holberg|2007|loc=p. 20}}</ref>此星出現之後的季節被稱爲夏天的“[[狗日]]”。<ref>{{harvard citation|Holberg|2007|loc=pp. 16-17}}</ref>[[愛琴海]][[基亞島]]的土著人會為得到涼風而祭祀天狼星和[[宙斯]]，並會等待天狼星翌年夏天的出現。如果其明亮地升起，就是發財的好兆頭；相反若其升起時渾濁或昏暗，則預示了瘟疫的到來。從島上發掘出的公元前3世紀錢幣上刻著散發著光芒的狗只或星體，顯示出了天狼星的重要性。<ref name=Hol20>{{harvard citation|Holberg|2007|loc=p. 20}}</ref>[[羅馬人]]于[[4月25日]]前後慶祝天狼星的[[偕日落]]，在當日向羅馬的五穀枯萎之神（Robigo）奉上一頭狗、點上香、祭上酒和一只羊，希望能阻止那一年星光帶來的[[銹菌]]。<ref>[[Ovid]]. ''[[Fasti (poem)|Fasti]]'' IV, lines 901-942.</ref>

[[亞歷山大]]的[[托勒密]]在自己的《[[天文學大成]]》中的第7及8卷所譜寫的星圖裏，以天狼星作爲天球的中線。他把天狼星描繪成六顆紅色恆星之一（見以下的[[天狼星#紅色爭議|紅色爭議]]部分）。其餘五顆實際上為M型和K型恆星，如[[大角星]]和[[參宿四]]。<ref>{{harvard citation|Holberg|2007|loc=p. 32}}</ref>

亮星對古[[玻里尼西亞文化|玻里尼西亞人]]十分重要，因爲他們要在[[太平洋]]衆多小島和環礁之間靠天象導航。當亮星位于地平綫上小許的時候，這些星體就被水手們作爲星象羅盤，從而找到指定的地點。這些星體也可作緯度標記，天狼星的偏差和[[斐濟]]島相符合，因此，它每晚都越過斐濟島的正上空。<ref>{{harvard citation|Holberg|2007|loc=p. 25}}</ref>天狼星是“巨鳥”星座“Manu”的身體，老人星是南邊的翅膀，南河三是北邊的翅膀，一共將玻里尼西亞的夜空剛好分成兩半。<ref>{{harvard citation|Holberg|2007|loc=pp. 25-26}}</ref>天狼星的偕日升標誌著希臘夏天的開始，因此它相反地標誌了[[毛利人]]冰冷冬天的開始，''Takurua''在當地語言代表天狼星和冬天。

===運行===

在1676年，[[愛德蒙·哈雷]]于[[大西洋]]南部的[[聖赫倫那島]]上度過了一年，目的是要研究南半球的星空。約40年后，于1718年他對比自己的[[天體測量學|天體測量]]和托勒密的《天文學大成》之後，發現了一直都被當作是“固定的”恆星的[[自行運動]]。大角星和天狼星都有顯著的移動，而當中天狼星更在之間1800年内向南移動了30[[角分|分角]]（約為[[月球]]的直徑）。<ref>{{citation |last=Holberg|first=JB|title=Sirius: Brightest Diamond in the Night Sky|pages=pp. 41–42|year=2007|publisher=Praxis Publishing|location=Chichester, UK|isbn=0-387-48941-X}}</ref>

于1868年，天狼星成爲第一顆被測量出運行速率的恆星。[[威廉·哈金斯]]爵士仔細檢查了天狼星的光譜，並觀測到一個顯著的[[紅移]]。他因此得出結論：天狼星以大約每秒40公里的速度遠離[[太陽系]]。<ref>{{cite book

| year=1994 | first=John | last=Daintith

| coauthors=Mitchell, Sarah; Tootill, Elizabeth; Gjertsen, D.

| title=Biographical Encyclopedia of Scientists

| pages=p. 442 | publisher=CRC Press | isbn=0750302879 }}

</ref><ref>{{cite journal

| last=Huggins

| first=W.

| title=Further observations on the spectra of some of the stars and nebulae, with an attempt to determine therefrom whether these bodies are moving towards or from the Earth, also observations on the spectra of the Sun and of Comet II

| journal=Philosophical Transactions of the Royal Society of London

| year=1868 | volume=158 | pages=529&ndash;564

| doi=10.1098/rstl.1868.0022 }}</ref>雖然對比今天測量出來的每秒7.6公里速度<ref name=simbada />數值過大，不過那次的測量卻開始了天體[[徑向速度]]的研究。

===伴星的發現===

[[Image:Celestia Sirius.jpg|thumb|right|A simulated image of Sirius A and B from [[Celestia]] ]]

在1844年，[[德國]]天文學家[[弗里德里希·威廉·貝塞爾]]從天狼星自行運動的變化中推斷出天狼星還有一顆當時未發現的伴星。<ref name="fwbessel">{{cite journal

| url=http://adsabs.harvard.edu/abs/1844MNRAS...6..136.

| title=On the Variations of the Proper Motions of ''Procyon'' and ''Sirius''

| author=F. W. Bessel, communicated by J. F. W. Herschel

| journal=Monthly Notices of the Royal Astronomical Society

| volume=6 | month=December | year=1844 | pages=136&ndash;141}}</ref>將近20年之後，也就是在[[1862年]][[1月31日]]，[[美國]]望遠鏡製作者和天文學家[[Alvan Graham Clark]]首次觀測到這顆暗淡的伴星。這伴星被稱爲天狼星B，或親切地稱“小狼”。<ref name="flammarion">{{cite journal

|url=http://adsabs.harvard.edu/abs/1877AReg...15..186F

|title=The Companion of Sirius

|author=Camille Flammarion

|journal=The Astronomical Register

|volume=15|issue=176|month=August|year=1877|pages=186–189}}</ref>較亮並能被肉眼觀測到的那一顆恆星現在有時候會被稱爲天狼星A。從1894年起，人們觀測到了天狼星系統裏一些明顯的軌道不規則性，因此大家認爲當中還有第三顆很小的伴星，雖然此假設違背確切證實。數據指出，第三顆星圍繞天狼星A的公轉周期為6年，其質量只得0.06[[太陽質量]]。它會比白矮星天狼星B要暗5到10級，因此很難被觀測得到。<ref>{{cite journal

| author=Benest, D., & Duvent, J. L.

| title=Is Sirius a triple star?

| journal=Astronomy and Astrophysics

| year=1995 | month=July | volume=299 | pages=621–628

| url=http://adsabs.harvard.edu/abs/1995A&A...299..621B

| accessdate=2007-02-04 }} For the instability of an orbit around Sirius B, see &sect;3.2.</ref>最近的觀測數據雖然證實不了它的存在，但是仍然有可能是其太接近天狼星A，以致觀測不到。1920年代發現的“第三顆星”似乎只不過是一顆背景天體。<ref>{{cite journal

| url = http://adsabs.harvard.edu/abs/2000A%26A...360..991B

| title = Search for companions around Sirius

| journal = Astronomy and Astrophysics

| accessdate = 2007-10-13

| author = Bonnet-Bidaud, J. M.; Colas, F.; Lecacheux, J.

| year=2000 | month=August | volume=360 | pages=991–996 }}</ref>

1915年，[[沃爾特·亞當斯]]在[[威爾遜山天文台]]使用一座60[[英寸]]（1.5[[米]]）反射器觀測天狼星B的[[光譜]]，並確定其為一顆暗淡的白色恆星。<ref>{{cite journal

|url=http://adsabs.harvard.edu/abs/1915PASP...27..236A

|title=The Spectrum of the Companion of Sirius

|author=W. S. Adams

|journal=Publications of the Astronomical Society of the Pacific

|volume=27 |issue=161 | month=December |year=1915 |pages=236–237

|doi=10.1086/122440}}</ref>就此，天文學家們就斷定它為一顆[[白矮星]]，並是有史以來第二顆發現的白矮星。<ref>{{cite journal

| last =Holberg | first = J. B.

| title=How Degenerate Stars Came to be Known as White Dwarfs

| journal=Bulletin of the American Astronomical Society

| year=2005 | volume=37 | issue=2 | pages=1503

| url=http://adsabs.harvard.edu/abs/2005AAS...20720501H

| accessdate=2007-05-15 }}</ref>[[Robert Hanbury Brown]]和[[Richard Q. Twiss]]于1959年在[[Jodrell Bank天文臺]]使用他們的[[光學干涉儀]]首次測量出天狼星A的直徑。<ref>{{cite journal

| author=R. Hanbury Brown and R. Q. Twiss

| title=Interferometry of the Intensity Fluctuations in Light. IV. A Test of an Intensity Interferometer on Sirius A

| journal=Proceedings of the Royal Society of London

| year=1958 | volume=248 | issue=1253 | pages=222–237

| url=http://adsabs.harvard.edu/abs/1958RSPSA.248..222B

| accessdate = 2006-07-04 }}</ref>在2005年，天文學家利用[[哈勃太空望遠鏡]]確認天狼星B的直徑幾乎相等于[[地球]]的直徑（12,000公里），不過其質量達到[[太陽]]的98%。<ref>{{cite web

| author=Dwayne Brown, Donna Weaver | date=December 13, 2005

| url=http://hubblesite.org/newscenter/archive/releases/2005/36/text/

| title=Astronomers Use Hubble to 'Weigh' Dog Star's Companion

| publisher=NASA | accessdate=2007-10-13

}}</ref><ref>{{cite news | first=Christine | last=McGourty

| title=Hubble finds mass of white dwarf

| publisher=BBC News | date=2005-12-14

| url=http://news.bbc.co.uk/2/hi/science/nature/4528586.stm

| accessdate=2007-10-13 }}</ref><ref>{{cite news | author=Peter Bond

| title=Astronomers Use Hubble to 'Weigh' Dog Star's Companion

| publisher=Royal Astronomical Society | date=2005-12-14

| url=http://www.ras.org.uk/index.php?option=com\_content&task=view&id=897&Itemid=2

| accessdate=2006-08-04 }}</ref><ref>{{cite journal

| author=M. A. Barstow, Howard E. Bond, J. B. Holberg, M. R. Burleigh, I. Hubeny, and D. Koester

| title=Hubble Space Telescope spectroscopy of the Balmer lines in Sirius B

| journal=Monthly Notices of the Royal Astronomical Society

| year=2005 | volume=362 | issue=4 | pages=1134&ndash;1142

| url=http://adsabs.harvard.edu/abs/2005MNRAS.tmp..739B

| accessdate = 2007-10-13

| doi=10.1111/j.1365-2966.2005.09359.x }}</ref>

===紅色爭議===

早在公元前150年，天文學家托勒密描述天狼星為一顆紅色天體，其餘5顆恆星：[[參宿四]]、[[心宿二]]、[[畢宿五]]和[[北河三]]都同時被記述作桔黃色或紅色色調的天體。<ref name=Hol157>{{harvard citation|Holberg|2007|loc=p. 157}}</ref>這個不一致性由[[拉特蘭]][[Lyndon, Rutland|Lyndon Hall]]的鄉紳、業餘天文學家[[Thomas Barker]]發現，他于1760年在[[倫敦]]皇家學院的聚會中演講。由於其他的星體許多都能轉變光度，使人們相信這些星體甚至也能轉變顔色。[[約翰·弗里德里希·威廉·赫歇爾]]再1839年也注意到了這一點，有可能是受他兩年前觀測過的[[海山二]]影響的。<ref name=Hol158>{{harvard citation|Holberg|2007|loc=p. 158}}</ref>[[Thomas Jefferson Jackson See]]在1892年重新提起了紅色天狼星的問題，他在1892年出版了幾篇論文，並在1926年出版了最後結論。<ref name=Hol161>{{harvard citation|Holberg|2007|loc=p. 161}}</ref>他指出，不只是托勒密發現天狼星的紅色，連詩人[[阿拉托斯]]、演説家[[西塞羅]]、將軍[[日爾曼尼庫斯]]都認爲天狼星是紅色的，儘管這三位都非天文學家。<ref name=Hol162>{{harvard citation|Holberg|2007|loc=p. 162}}</ref>[[塞內卡]]也把天狼星描述成暗紅色的，還要比[[火星]]的顔色更深。<ref>{{cite journal |author=Whittet DCB |year=1999|title=A Physical Interpretation of the ‘red Sirius’ Anomaly |journal=Mon. Not. R. Astron. Soc. |volume=310|pages=335–39|doi=10.1046/j.1365-8711.1999.02975.x}}</ref>雖然如此，並非所有的古代觀測者都看到紅色的天狼星，如公元1世紀詩人[[Marcus Manilius]]把它描寫為“天藍”，4世紀的[[Avienus]]也一樣。<ref name=Hol163>{{harvard citation|Holberg|2007|loc=p. 163}}</ref>在[[中國]]古代，白色是天狼星的標準顔色，早至公元前2世紀晚至公元后7世紀若干記錄都記述天狼星呈現著白色的光芒。<ref>{{cite journal| author=江晓原 | year=1992 | title=中国古籍中天狼星颜色之记载 | journal=天文学报 |volume=33|issue=4|language=Chinese}}</ref><ref>{{cite journal|author=Xiao-Yuan Jiang|title=The colour of Sirius as recorded in ancient Chinese texts

|url=http://adsabs.harvard.edu/abs/1993ChA%26A..17..223J

|journal=Chinese Astronomy and Astrophysics

|volume=17|issue=2|pages=223–228|year=1993|month=April|doi=10.1016/0275-1062(93)90073-X}}</ref>

于1985年，[[德國]]天文學家[[Wolfhard Schlosser]]和[[Werner Bergmann]]拿出了一件8世紀的[[倫巴第]]手稿，which contains ''De cursu stellarum ratio'' by St. [[Gregory of Tours]]. The [[Latin]] text taught readers how to determine the times of nighttime prayers from positions of the stars, and Sirius is described within as ''rubeola'' 'reddish'. The authors proposed this was further evidence Sirius B had been a red giant at the time.<ref>{{cite journal |author=Schlosser W, Bergmann W|year=1985 |month=November|title=An early-medieval account on the red colour of Sirius and its astrophysical implications |journal=Nature |issue=318 |pages=45–46|doi=10.1038/318045a0|url=http://www.nature.com/nature/journal/v318/n6041/abs/318045a0.html (abstract) |accessdate= 2008-01-11|volume=318}}</ref> However, other astronomers replied that it was likely St. Gregory had been referring to Arcturus instead.<ref>{{cite journal |author=McCluskey SC|year=1987|month=January|title=The colour of Sirius in the sixth century|journal=Nature |issue=325 |pages=87|doi=10.1038/325087a0|url=http://www.nature.com/nature/journal/v325/n6099/abs/325087a0.html (abstract) |accessdate= 2008-01-11|volume=318}}</ref><ref>{{cite journal |author=van Gent RH|year=1987|month=January|title=The colour of Sirius in the sixth century|journal=Nature |issue=325 |pages=87–89|doi=10.1038/325087b0|url=http://www.nature.com/nature/journal/v325/n6099/abs/325087b0.html (abstract) |accessdate= 2008-01-11|volume=318}}</ref>

用天狼星A或天狼星B[[恆星演化]]的可能性來解釋顔色爭議這個理論已經被天文學家推翻，原因是幾千年的演化時間太短，並且從星雲的分析並沒有看出曾發生過這種演化過程的跡象。<ref name=Whittet99/>與至今還未發現的第三顆星的交互作用也是天文學家提出的可能性之一。<ref>{{cite journal

| last=Kuchner

| first=Marc J.

| coauthors=Brown, Michael E.

| title= A Search for Exozodiacal Dust and Faint Companions Near Sirius, Procyon, and Altair with the NICMOS Coronagraph

| journal=Publications of the Astronomical Society of the Pacific

| year=2000

| volume=112

| pages=827–832

| url=http://arxiv.org/abs/astro-ph/0002043

| accessdate=2008-01-21

| doi= 10.1086/316581

}}</ref>其他解釋也有：被描述成紅色在詩詞裏有隱喻凶兆的意思，或是升起時強烈的閃爍使人們以爲天狼星是紅色的。用肉眼來看，天狼星在地平綫不遠處的時候似乎閃爍著紅色、白色和藍色的光輝。<ref name=Whittet99>{{cite journal|author=Whittet DCB|title=A physical interpretation of the 'red Sirius' anomaly|journal=Monthly Notices of the Royal Astronomical Society|year=1999|volume=310|issue=2|pages=355–359| url=http://adsabs.harvard.edu/abs/1999MNRAS.310..355W|accessdate=2007-06-30|doi=10.1046/j.1365-8711.1999.02975.x}}</ref>

==外觀==

[[Image:Sirius A and B Hubble photo.jpg|thumb|left|220px|[[哈勃太空望遠鏡]]拍攝到的天狼星A和天狼星B，白矮星天狼星B位于左下方。<ref>{{cite news

| title=The Dog Star, Sirius, and its Tiny Companion

| publisher=Hubble News Desk | date=2005-12-13

| url=http://hubblesite.org/newscenter/newsdesk/archive/releases/2005/36/image/a

| accessdate=2006-08-04 }}</ref> The diffraction spikes and concentric rings are [[Point spread function|instrumental effects]].]]

天狼星的[[視星等]]有-1.47，使其成爲夜空中最亮的恆星，幾乎為第二亮的[[大角星]]的兩倍。<ref name=Holintroxi/>然而，它仍然不如[[月球]]、[[金星]]或[[木星]]光亮。[[水星]]和[[火星]]偶爾也會比天狼星更亮。<ref>{{cite web

| last=Espenak | first=Fred

| url=http://sunearth.gsfc.nasa.gov/eclipse/TYPE/mars2.html

|title=Mars Ephemeris

|work=Twelve Year Planetary Ephemeris: 1995-2006, NASA Reference Publication 1349}}</ref><ref>{{cite web

| last=Espenak | first=Fred

| url=http://sunearth.gsfc.nasa.gov/eclipse/TYPE/mercury2.html

|title=Mercury Ephemeris

|work=Twelve Year Planetary Ephemeris: 1995-2006, NASA Reference Publication 1349}}</ref>天狼星幾乎能從地球上任何有人的地方觀測得到，只除了居住于北緯73度以北的人無法看到。可是，一些在地球北邊的城市觀測到的天狼星也並不會升得很高，如[[聖彼特堡]]的天狼星只會升到地平綫上13°。<ref>{{harvard citation|Holberg|2007|loc=p. 82}}</ref>天狼星、[[南河三]]和[[參宿四]]對於居住在[[北半球]]的人來看，組成了[[冬季大三角]]的三個[[頂點]]。<ref>{{cite web

| last=Darling | first=David

| url=http://www.daviddarling.info/encyclopedia/W/Winter\_Triangle.html

| title=Winter Triangle

| work=The Internet Encyclopedia of Science

| accessdate=2007-10-20 }}</ref>由於天狼星的[[赤緯]]約為-17°，<ref name=simbada />因此從南緯73°起它是一顆[[拱極星]]。7月初從[[南半球]]可以看到天狼星在太陽下山后下山，又在太陽升起前升起。

在適當環境條件之下，天狼星甚至能在有太陽的時候被肉眼看到。當然，天空要非常清，觀測地點的海拔必須要高，太陽要低低的挂在地平綫上，再加上天狼星要在頭頂上，十分難得。<ref>{{cite journal

| first=C. | last=Henshaw

| title=On the Visibility of Sirius in Daylight

| journal=Journal of the British Astronomical Association

| year=1984 | volume=94 | issue=5 | pages=221–222

| url=http://adsabs.harvard.edu/abs/1984JBAA...94..221H

| accessdate=2007-10-20 }}</ref>

基於天狼星雙星系統的環繞運行軌道，兩顆星的最小分距為3[[角分]]而最大分距為11[[角分]]。在他們相距最近的時候，要在觀測時分別出兩顆星體十分困難，因爲白矮星天狼星B就在和它很近卻有比它亮許多的天狼星A旁邊。要清楚分開它們，除天氣理想外，則需要一座口徑至少有300mm的[[天文望遠鏡]]。1994年，兩顆星到達了它們的[[拱點]]，<ref>Two full 50.09&nbsp;yr orbits following the periastron epoch of 1894.13 gives a date of 1994.31.</ref>從那時開始，這對雙星開始遠離對方，用天文望遠鏡分開它們就更加容易了。<ref name=mullaney>{{cite web

| last=Mullaney | first=James | date=March 2008

| url=http://www.skyandtelescope.com/observing/objects/doublestars/3309846.html?page=3&c=y

| title=Orion's Splendid Double Stars: Pretty Doubles in Orion's Vicinity

| publisher=Sky & Telescope | accessdate=2008-02-01 }}</ref>

有著離地球2.6[[秒差距]]或8.6[[光年]]的距離，天狼星A和天狼星B佔據了8顆[[恆星距離列表|最接近]][[太陽系]]恆星之中的2顆，<ref name="reconslist">{{cite web

| last = Henry | first = Dr. Todd J. | date= 2006-07-01

| url = http://www.chara.gsu.edu/RECONS/TOP100.posted.htm

| title = The One Hundred Nearest Star Systems

| publisher = RECONS | accessdate = 2006-08-04 }}</ref>而且更是第5接近太陽系的恆星系。<ref name="reconslist" />距離近是天狼星如此亮的原因之一，其他相似的星體有昏暗的[[南門二]]，對比于遙遠卻極亮的[[超巨星]]如[[老人星]]、[[參宿七]]或[[參宿四]]。<ref>{{cite web

| url=http://www.rasnz.org.nz/Stars/BrightStars.htm

| title=The Brightest Stars

| publisher=Royal Astronomical Society of New Zealand

| accessdate=2007-12-14 }}</ref>但是天狼星仍然比太陽要亮25倍。<ref name="apj\_630" />距離天狼星最近的大型恆星是[[南河三]]，距離為1.61角差距或5.24光年。<ref name="solstation" />1977年發射的[[旅行者2號]]飛船，在完成了研究四顆[[類木行星]]的任務之後，預計將于大約296,000年之後到達4.3光年以外的天狼星。<ref>{{cite web

| last = Angrum

| first = Andrea

| date= August 25, 2005

| url =http://voyager.jpl.nasa.gov/mission/interstellar.html

| title = Interstellar Mission

| publisher = NASA/JPL

| accessdate = 2007-05-07

}}</ref>

==雙星系統==

天狼星是一個雙星系統，當中的兩顆白色恆星互相圍繞公轉，相距約20[[天文單位]]<ref>1&nbsp;light&nbsp;year&nbsp;=&nbsp;63,241&nbsp;AU; semi-major axis =&nbsp;distance &times; tan(subtended angle) =&nbsp;8.6 &times; 63,241 &times; tan(7.56&Prime;) =&nbsp;19.9&nbsp;A.U., approximately</ref>（大概是[[太陽]]和[[天王星]]之間的距離），公轉周期卻只有50多年。較亮的一顆星，或稱天狼星A，是一顆A1V[[光譜型|型]][[主序星]]，估計表面溫度為9,940[[開氏度|K]]。<ref name="iau224" />其伴星天狼星B，已經度過了主序星的過程，成爲了一顆[[白矮星]]。儘管現在天狼星B的光譜比天狼星A暗10,000倍，它卻曾經是兩顆星體之中質量較大的一顆。<ref name=hol214/>這個雙星系統的年齡估計為大約2億3000万年。在其生命前期，人們猜想有兩顆藍白色恆星互相以橢圓圍繞公轉，周期為9.1年。<ref name=hol214>{{harvard citation|Holberg|2007|loc=p. 214}}</ref>[[紅外線天文衛星]]量度到，天狼星系統要比預計的放射更多的[[紅外線]]輻射。這可能是系統裏星塵的表現，並且對於雙星系統來説較爲罕見。<ref>{{cite conference

| first=D. E.

| last=Backman

| co-authors=Gillett, F. C.; Low, F. J.

| title=IRAS observations of nearby main sequence stars and modeling of excess infrared emission

| booktitle=Proceedings, 6th Topical Meetings and Workshop on Cosmic Dust and Space Debris

| publisher=COSPAR and IAF.

| date=June 30-July 11, 1986

| location=Toulouse, France

| url=http://adsabs.harvard.edu/cgi-bin/nph-bib\_query?bibcode=1986AdSpR...6...43B

| accessdate = 2007-10-20 | id = ISSN 0273-1177 }}</ref><ref name="solstation" />

===天狼星A===

[[Image:Sirius A and B artwork.jpg|thumb|250px|right|藝術家對天狼星系統的想象圖。天狼星A是較大的一顆。]]

天狼星A的質量約是[[太陽]]的2.1倍。<ref>{{cite web|last=Pedro|first= Braganca|date=2003-07-15|url=http://www.space.com/scienceastronomy/brightest\_stars\_030715-1.html

|title=The 10 Brightest Stars|publisher=SPACE.com|accessdate=2006-08-04}}</ref><ref name="solstation">{{cite web|url=http://www.solstation.com/stars/sirius2.htm|title = Sirius 2 | publisher = SolStation|accessdate = 2006-08-04}}</ref>[[光學干涉儀]]量度出此星的半徑，估計角直徑為5.936±0.016[[milliarcsecond|mas]]。它的[[恆星自轉]]速度為較慢的每秒16公里，因此並沒有有效地把星體壓扁成圓盤形。<ref name="aaa407"/>[[織女一]]和天狼星B的體積相近，以更高速的每秒274公里自轉，使其在赤道處向外拱起。<ref name=apj645>{{cite journal

| last=Aufdenberg | first=J.P.

| coauthors=Ridgway, S.T. ''et al''

| title=First results from the CHARA Array: VII. Long-Baseline Interferometric Measurements of Vega Consistent with a Pole-On, Rapidly Rotating Star?

| journal=Astrophysical Journal

| year=2006 | volume=645

| pages=664&ndash;675

| url=http://www.chara.gsu.edu/CHARA/Papers/Paper6.pdf

| format=PDF | accessdate=2007-11-09

| doi=10.1086/504149 }}</ref>

天體模型指出天狼星A形成于一次[[分子云]]坍塌的時候，到了1千萬年之後，其能源的生成已經完全由[[核聚變]]提供。其核心成爲了[[對流層]]，並利用[[碳氮氧循環]]製造能量。<ref name="aaa407"/>人們預測，天狼星A會在其形成之后10億年（10<sup>9</sup>）之内用盡儲存在核心的[[氫]]。此時它會經歷[[紅巨星]]階段，然後再溫和下來，成爲一顆白矮星。

天狼星A的光譜又著很深的金屬線，顯示出一些重于[[氦]]的元素的增強（如[[鐵]]）。<ref name="aaa407"/><ref name="solstation" />相比于太陽，天狼星A大氣層裏相對于氫含量的鐵含量為<math>\begin{smallmatrix}[\frac{Fe}{H}]=0.5\end{smallmatrix}</math>，<ref name="apj548"/>也等於10<sup>0.5</sup>，意思是說它大氣層中的鐵的含量是太陽的316%。不太可能整顆恆星都富有金屬元素，而其實這些金屬元素都可能是懸浮在位于表面的一層薄對流層上。<ref name="aaa407"/>

===天狼星B===

天狼星B的質量幾乎相等于太陽的質量，並且是已知最大質量的白矮星之一。它差不多有平均的0.5至0.6[[太陽質量]]的兩倍。然而這麽多物質卻被壓縮成約為[[地球]]的大小。其目前的表面溫度為25,200 K。<ref name="apj\_630"/>但是，由於在内部已經沒有能量的生成，剩餘的熱量會以輻射的形態放射出外太空，天狼星B終究會逐漸冷卻，需時多于2億年。<ref>{{cite web

| last=Imamura | first=James N.

| date=[[October 2]], [[1995]]

| url=http://zebu.uoregon.edu/~imamura/208/feb24/cool.html

| title=Cooling of White Dwarfs

| publisher=University of Oregon

| accessdate=2007-01-03 }}</ref>

一顆恆星要經過主序星和紅巨星階段才會成爲白矮星。天狼星B成爲白矮星時的年齡比它現在的年齡小一半多一點，約為1億2千萬年前。還是一顆主序星時它估計有5個太陽質量大。<ref name=apj\_630 /> and was a B-type star (roughly B4-5)<ref>{{cite web|last=Siess|first=Lionel|year=2000

| url = http://astropc0.ulb.ac.be/~siess/server/iso.html|title = Computation of Isochrones

| publisher = Institut d'Astronomie et d'Astrophysique, Université libre de Bruxelles| accessdate=2007-03-24}}</ref><ref>{{cite conference

| first = Francesco

| last = Palla

| title = Stellar evolution before the ZAMS

| booktitle = Proceedings of the international Astronomical Union 227

| pages = 196-205

| publisher = Cambridge University Press

| date= May 16-20, 2005

| location = Italy

| url = http://adsabs.harvard.edu/abs/1976IAUS...73...75P

| accessdate = 2007-03-24

}}</ref>天狼星B是紅巨星的時候，可能增加了其伴星天狼星A的[[金屬量]]。

天狼星B最初由碳及氧元素組成，這兩種元素是形成天狼星B的已死亡恆星裏的氦核聚變產生的。<ref name="apj\_630"/>這些元素被更輕的元素覆蓋，並根據質量來分層，因爲天狼星B有著高表面重力。<ref>{{cite journal

| last=Koester | first=D.

| coauthors=Chanmugam, G.

| title=Physics of white dwarf stars

| journal=Reports on Progress in Physics

| year=1990 | volume=53 | issue=7 | pages=837–915

| url=http://adsabs.harvard.edu/abs/1990RPPh...53..837K

| accessdate=2008-01-03

| doi=10.1088/0034-4885/53/7/001

}}</ref>因此，天狼星B的外層大氣層幾乎為純氫，宇宙中最輕的元素，光譜中也找不到任何其它元素。<ref>{{cite journal

| last=Holberg | first=J. B.

| coauthors=Barstow, M. A.; Burleigh, M. R.; Kruk, J. W.; Hubeny, I.; Koester, D.

| title=FUSE observations of Sirius B

| journal=Bulletin of the American Astronomical Society

| year=2004 | volume=36 | pages=1514

| url=http://adsabs.harvard.edu/abs/2004AAS...20510303H

| accessdate=2007-10-20 }}</ref>

===天狼星超星系團===

在1909年[[埃希纳·赫茨普龙]]是第一位提出天狼星是[[大熊座移動星團]]之一的人，他在觀測天狼星系統在天空中的移動路徑之後得出這個結論。大熊座移動星團是由220顆恆星組成的，並在太空有相同的移動路徑。其最初形成時是[[疏散星團]]的一部分，從此便逐漸脫離引力的牽引。<ref>{{cite web

| last=Frommert | first=Hartmut

| coauthors=Kronberg, Christine

| date=[[April 26]], [[2003]]

| url=http://seds.lpl.arizona.edu/Messier/xtra/ngc/uma-cl.html

| title=The Ursa Major Moving Cluster, Collinder 285

| publisher=SEDS

| accessdate=2007-11-22

}}</ref>不過，在2003年和2005年作出的分析卻表示天狼星未必屬於這一星團。大熊座移動星團估計年齡為4到6億年，而天狼星的[[金屬量]]和太陽的相似，因此年齡只有2億多年，對於這星團來説太年輕。<ref name=apj\_630 /><ref>{{cite journal

| last=King | first=Jeremy R.

| coauthors=Villarreal, Adam R.; Soderblom, David R.; Gulliver, Austin F.; Adelman, Saul J.

| title=Stellar Kinematic Groups. II. A Reexamination of the Membership, Activity, and Age of the Ursa Major Group

| journal=Astronomical Journal

| year=2003 | volume=15 | issue=4 | pages=1980–2017

| url=http://adsabs.harvard.edu/abs/2003AJ....125.1980K

| accessdate=2007-11-22

| doi=10.1086/368241 }}</ref><ref>[http://www.astronomy.com/asy/default.aspx?c=a&id=3391 The life and times of Sirius B], Ken Croswell, ''Astronomy'', online, [[July 27]], [[2005]]. Accessed [[October 19]], [[2007]].</ref>天狼星可能屬於一個提出的“天狼星超星系團”，另外可能屬於這個星團的疏散恆星有[[御夫座β]]、[[北冕座α]]、[[巨爵座β]]、[[波江座β]]和[[巨蛇座β]]。<ref>{{cite journal

| last=Eggen | first=Olin J.

| title=The Sirius supercluster in the FK5

| journal=Astronomical Journal

| year=1992 | volume=104 | issue=4 | pages=1493–1504

| url=http://adsabs.harvard.edu/cgi-bin/bib\_query?1992AJ....104.1493E

| accessdate=2007-11-22

| doi=10.1086/116334 }}</ref>此星團是太陽附近500[[光年]]以内的三個星團之一。其餘兩個為[[畢宿星團]]和[[昂宿星團]]，都各有幾百顆恆星。.<ref>{{cite journal

| last=Olano | first=C. A.

| title=The Origin of the Local System of Gas and Stars

| journal=The Astronomical Journal

| year=2001 | volume=121 | pages=295–308

| url=http://adsabs.harvard.edu/abs/2001AJ....121..295O

| accessdate=2007-12-11

| doi=10.1086/318011 }}</ref>

==詞源及文化重要性==

天狼星的英文正統名稱來自于[[拉丁語]]''Sīrius''，又來自[[古希臘語]]''Σείριος''（''Seirios''是“熱烈”或“炎熱的天氣”之意），<ref name=Liddell>{{cite book|last=Liddell | first=Henry G.|authorlink=Henry Liddell|coauthors=[[Robert Scott (philologist)|Scott, Robert]]|year=1980|title=Greek-English Lexicon|edition=Abridged Edition|publisher=Oxford University Press|location=Oxford|isbn=0-19-910207-4}}</ref>但是這古希臘詞也可能在[[希臘古風時期]]之前從某處發展過來。<ref name =Hol1516 />最早發現使用這個名稱要追溯到公元前7世紀[[赫西奧德]]的詩作《[[工作與時日]]》中。<ref name =Hol1516>{{harvard citation|Holberg|2007|loc=pp. 15-16}}</ref>天狼星還有另外超過50個編號和名稱。<ref name=Holintroxi>{{harvard citation|Holberg|2007|loc=p. xi}}</ref>在[[阿拉伯語]]裏，天狼星被稱爲'''الشعرى'''（拼音：''al-ši‘rā''或''al-shira''，[[中文]]：“首領”），<ref>{{cite web

| author=Staff | year=2007

| url=http://www.britannica.com/eb/article-9067991/Sirius

| title=Sirius | publisher=Britannica Online Encyclopedia

| accessdate=2007-09-10 }}</ref>英文的另一稱謂''Aschere''就從其而來。在[[梵語]]裏，天狼星是''Mrgavyadha''（“獵鹿者”）或''Lubdhaka''（“獵人”）。當被稱作Mrgavyadha時，天狼星代表[[楼陀罗]]（[[湿婆]]）；<ref>{{cite web|url=http://www.indiastar.com/kak5.htm|title=Indic ideas in the Greco-Roman world|author=Subhash Kak}}</ref><ref>{{cite web|url=http://www.religiousworlds.com/mandalam/shiva.htm|title=Shri Shri Shiva Mahadeva}}</ref>稱作Scandinavia時，天狼星就被視爲''Lokabrenna''（“Loki放下的火”或“Loki的火炬”），日本土語稱之爲{{lang|ja|青星}}（''Aoboshi''）。在[[中世紀]]的[[占星術]]裏，天狼星是一顆[[Behenian fixed star]]，<ref>{{cite book

| first=Donald | last=Tyson | coauthors=Freake, James

| year=1993

| title=Three Books of Occult Philosophy

| publisher=Llewellyn Worldwide

| id=ISBN 0875428320 }}</ref> associated with [[beryl]] and [[juniper]]. Its [[kabbalistic]] symbol [[Image:Agrippa1531 Canismaior.png]] was listed by [[Heinrich Cornelius Agrippa]].<ref>{{cite book

| first=Heinrich Cornelius | last=Agrippa | year=1533

| title=De Occulta Philosophia }}</ref>

Many cultures have historically attached special significance to Sirius, particularly in relation to dogs. Indeed, it is often colloquially called the "[[Dog]] Star" as the brightest star of [[Canis Major]], the "Great Dog" constellation. It was also classically depicted as [[Orion (mythology)|Orion]]'s dog. The Ancient Greeks also thought that Sirius' emanations could affect dogs adversely, making them behave abnormally in the heat of summer ("Dog Days"). Their excessive panting was thought to place them at risk of desiccation and disease. In extreme cases, a foaming dog may have [[rabies]], which could infect and kill humans who'd been bitten.<ref name=Hol20/> The Romans knew these days as ''dies caniculares'' and the star as Canicula ("little dog"). In [[Chinese astronomy]] the star is known as the star of the 'celestial wolf' ({{CJKV|t=天狼|s=天狼|j=天狼|k=천랑}}; [[Pinyin|Chinese romanization]]: Tiānláng; [[Romanization of Japanese|Japanese romanization]]: Tenrō; [[Korean romanization]]: Cheonlang),<ref>{{harvard citation|Holberg|2007|loc=p. 22}}</ref> in the [[Well (Chinese constellation)|Mansion of Jǐng]] (井宿). Farther afield, many nations among the indigenous peoples of North America also associated Sirius with canines; the [[Seri]] and [[Tohono O'odham]] of the southwest note the star as a dog that follows mountain sheep, while the [[Blackfoot]] called it 'Dog-face'. The [[Cherokee]] paired Sirius with Antares as a dog-star guardian of either end of the "Path of Souls". The [[Pawnee]] of Nebraska had several associations; the Wolf (Skidi) tribe knew it as the 'Wolf Star', while other branches knew it as the 'Coyote Star'. Further north, the Alaskan [[Inuit]] of the [[Bering Strait]] called it 'Moon Dog'.<ref>{{harvard citation|Holberg|2007|loc=p. 23}}</ref>

Several cultures also associated the star with a bow and arrows. The Ancient Chinese visualized a large bow and arrow across the southern sky, formed by the constellations of [[Puppis]] and [[Canis Major]]. In this, the arrow tip is pointed at the wolf Sirius. A similar association is depicted at the [[Dendera Temple complex|Temple of Hathor]] in [[Dendera]], where the goddess [[Satis|Satet]] has drawn her arrow at [[Hathor]] (Sirius). Known as ''Tir'', the star was portrayed as the arrow itself in later Persian culture.<ref>{{harvard citation|Holberg|2007|loc=p. 24}}</ref>

===Dogon===

The [[Dogon people]] are an [[ethnic]] group in [[Mali]], [[West Africa]], reported to have traditional astronomical knowledge about Sirius that would normally be considered impossible without the use of telescopes. According to [[Marcel Griaule]]'s books ''Conversations with Ogotemmêli'' and ''The Pale Fox'' they knew about the fifty-year orbital period of Sirius and its companion prior to western astronomers. They also refer to a third star accompanying Sirius A and B. [[Robert Temple]]'s 1976 book ''[[The Sirius Mystery]]'', credits them with knowledge of the four Galilean moons of [[Jupiter]] and the rings of [[Saturn]]. This has been the subject of controversy and speculation. According to a 1978 ''[[Skeptical Enquirer]]'' article it is possibly the result of cultural contamination.<ref>{{cite web

| last=Ridpath | first=Ian | year=1978

| url=http://www.csicop.org/si/7809/sirius.html|title=Investigating the Sirius "Mystery"

| publisher=Committee for Skeptical Inquiry

| accessdate=2007-06-26 }}</ref> More recently, the contaminators have been suggested to be the [[ethnographers]] themselves.<ref>{{cite web

| url=http://www.ramtops.co.uk/dogon.html

| title=The Dogon Revisited

| accessdate=2007-10-13 | first=Bernard R. Ortiz

| last=de Montellano }}

</ref><ref>{{cite web

| url=http://www.philipcoppens.com/dogonshame.html

| title=Dogon Shame | accessdate=2007-10-13

| first=Philip | last=Coppens }}</ref> Others see this explanation as being too simplistic.<ref>{{cite journal

| last=Apter | first=Andrew

| title=Griaule’s Legacy: Rethinking “la parole claire” in Dogon Studies

| journal=Cahiers d’Études africaines

| year=1999 | volume=45 | issue=1 | pages=95&ndash;129

| url=http://www.sscnet.ucla.edu/history/apter/Cahiers.pdf

| accessdate=2008-04-16 }}</ref> The work of those such as [[Jean Rouch]] documenting the findings of Griaule, specifically surrounding the [[Sigui]] festival, have not been critiqued in the same manner.

===Modern legacy===

{{seealso|Sirius in fiction}}

Sirius is frequently a [[Sirius in fiction|subject]] used in [[science fiction]] and related [[popular culture]].<ref>{{cite book | author= The editors of ''Asimov's Science Fiction'' and ''Analog'' |title= Writing Science Fiction & Fantasy |publisher= St. Martin's Griffin |date=1993 |pages = p. 108 |isbn=978-0312089269 }} </ref> It also features on the coat of arms of [[Macquarie University]], and is the name of its alumnae journal.<ref>{{cite web |title= About Macquarie University — Naming of the University | work = Macquarie University official website | publisher = Macquarie University | date= 2007| url= http://www.mq.edu.au/about/naming.html |accessdate= 2007-12-27 }}</ref> Seven ships of the [[Royal Navy]] have been called [[HMS Sirius|HMS ''Sirius'']] since the 18th century, with [[HMS Sirius (1786)|the first]] being the [[flagship]] of the [[First Fleet]] to [[Australia]] in 1788.<ref>{{cite book |title=The Sirius: Past and Present|author=Henderson G, Stanbury M|year=1988 |publisher=Collins|location=Sydney|isbn=0-7322-2447-0|pages=p. 38}}</ref> The [[Royal Australian Navy]] subsequently named a vessel [[HMAS Sirius (O 266)|HMAS ''Sirius'']] in honor of the flagship.<ref>{{cite web | author = Royal Australian Navy

| title = HMAS Sirius: Welcome Aboard| work = Royal Australian Navy - Official Site| publisher = Commonwealth of Australia| date = 2006| url = http://www.navy.gov.au/ships/sirius/| accessdate =2008-01-23}}

</ref> American vessels include the [[USNS Sirius (T-AFS-8)|USNS ''Sirius'' (T-AFS-8)]] as well as a monoplane model—the [[Lockheed Sirius]], the first of which was flown by [[Charles Lindbergh]].<ref>{{cite web | last = van der Linden | first = FR | title = Lockheed 8 Sirius | work = Smithsonian: National Air and Space Museum - Official Website | publisher = Smithsonian Institute | date = 2000 | url = http://www.nasm.si.edu/research/aero/aircraft/lockheed\_sirius.htm | accessdate =2008-01-26}}</ref> The name was also adopted by [[Mitsubishi Motors]] as the [[Mitsubishi Sirius engine]] in 1980.<ref>{{cite web

| title = Mitsubishi Motors history | work = Mitsubishi Motors - South Africa Official Website| publisher = Mercedes Benz| date = 2007 | url = http://www.mitsubishi-motors.co.za/featuresites/mm\_history/Galant.asp| accessdate =2008-01-27}}</ref> The name of the [[North America]]n [[satellite radio]] company CD Radio was changed to [[Sirius Satellite Radio]] in November, 1999, being named after "the brightest star in the night sky".<ref>{{cite web

| url=http://www.referenceforbusiness.com/history2/57/Sirius-Satellite-Radio-Inc.html

| title=Sirius Satellite Radio, Inc. - Company Profile, Information, Business Description, History, Background Information on Sirius Satellite Radio, Inc

| publisher=Net Industries, LLC. | accessdate=2008-01-22 }}</ref> [[J. K. Rowling]] has used the name Sirius in the [[Harry Potter]] series as a name for Harry's godfather. His animagus (the animal form his body takes) is a giant black dog.<ref>{{cite web

| last=Kopel | first=Dave | date=[[June 9]], [[2003]]

| url=http://www.nationalreview.com/kopel/kopel062003.asp

| title=Deconstructing Rowling

| publisher=National Review Online

| accessdate=2008-02-28 }}</ref>

Composer [[Karlheinz Stockhausen]] has been claimed to have said on several occasions that he came from a planet in the Sirius system<ref>{{cite news | url=http://archive.salon.com/people/bc/2001/01/16/stockhausen/index.html | title=Karlheinz Stockhausen | work=Salon.com | author=Paul McEnery | date=[[January 16]], [[2001]]}}</ref><ref>{{cite news | url=http://www.guardian.co.uk/music/2005/oct/13/classicalmusicandopera | title=Beam me up, Stocky | work=The Guardian | date=[[October 13]], [[2005]]}}</ref> and made numerous references to the star in his music.

==See also==

\* [[List of nearest stars]]

\* [[List of brightest stars]]

==References==

{{reflist|2}}

==External links==

{{commons|Category:Sirius|Sirius}}

\*[http://www.astro.uiuc.edu/~kaler/sow/sirius.html Professor Kaler's webpage on Sirius]

\*[http://apod.nasa.gov/apod/ap001006.html APOD of Sirius B in x-ray]

\*[http://chandra.harvard.edu/chronicle/0400/sirius\_part2.html Discussion on Dogon issue]

\*{{cite journal

| last=Barker | first=Tho. | coauthors=Stukeley, W.

| title=Remarks on the Mutations of the Stars

| journal=Philosophical Transactions

| year=1760 | volume=51 | pages=498-504

| url=http://www.jstor.org/pss/105393

| accessdate=2008-08-05 }}

{{featured article}}

[[Category:Bayer objects|Canis Majoris, Alpha]]

[[Category:Binary stars]]

[[Category:Canis Major constellation]]

[[Category:Flamsteed objects|Canis Majoris, 9]]

[[Category:HD and HDE objects|048915]]

[[Category:HIP objects|032349]]

[[Category:Mythological dogs]]

[[Category:White dwarfs]]

[[Category:A-type main sequence stars]]

[[Category:Stars with proper names]]

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{{Link FA|tr}}

[[ar:الشعرى اليمانية]]

[[ast:Sirius]]

[[bn:লুব্ধক]]

[[bg:Сириус]]

[[ca:Sírius]]

[[cs:Sírius]]

[[da:Sirius (stjerne)]]

[[de:Sirius]]

[[et:Siirius]]

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[[es:Sirio (estrella)]]

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[[pt:Sirius]]

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