AVHRR GAC L1C processing version 2 in May/June 2015 and subsequend GAC_overlap.py

Platform	Total number of L1b orbits	Total number of whitelisted L1b orbits	Total number of whitelisted L1c orbits	Total number of missing L1c orbits	Total number of blacklisted orbits	start_time_l1c > end_time_l1c	orbit duration > 120 minutes
NOAA7	16869	16574	16274	96	499	1	9
NOAA9	18731	18456	18296	146	289	0	14
NOAA11	31802	30152	29972	144	1686	1	8
NOAA12	39846	37585	37398	66	2382	0	24
NOAA14	41148	39742	39342	102	1704	9	47
NOAA15	84735	83843	80307	824	3604	2	776
NOAA16	56970	56569	55828	54	1088	2	682
NOAA17	49896	49425	39300	13	10583	0	360
NOAA18	49980	49436	49188	19	773	2	7
NOAA19	30601	30354	30113	17	471	0	8
METOPA	47748	46661	46371	280	1097	2	3
METOPB	17682	17589	17400	165	117	0	0
TOTAL	**486008**	**476386**	**459789**	**1926**	**24293**	**19**	**1938**

1926	sqlite3 -line AVHRR_GAC_archive_v2_newstats_post_overlap.sqlite3 "select count(*) from vw_std where satellite_name not like 'NOAA6' and satellite_name not like 'NOAA8' and satellite_name not like 'NOAA10' and satellite_name not like 'TIROSN' and blacklist=0 and start_time_l1c is null"
459789	sqlite3 -line AVHRR_GAC_archive_v2_newstats_post_overlap.sqlite3 "select count(*) from vw_std where satellite_name not like 'NOAA6' and satellite_name not like 'NOAA8' and satellite_name not like 'NOAA10' and satellite_name not like 'TIROSN' and blacklist=0 and start_time_l1c is not null"
24293	sqlite3 -line AVHRR_GAC_archive_v2_newstats_post_overlap.sqlite3 "select count(*) from vw_std where satellite_name not like 'NOAA6' and satellite_name not like 'NOAA8' and satellite_name not like 'NOAA10' and satellite_name not like 'TIROSN' and blacklist=1"

sqlite3	AVHRR_GAC_archive.sqlite3		AVHRR_GAC_archive_v2_post_overlap.sqlite3				
	select count(*) from vw_std where satellite_name = 'NOAA7';	select count(*) from vw_std where satellite_name = 'NOAA7' and blacklist=0;	select count(*) from vw_std where satellite_name = 'NOAA7' and blacklist=0 and start_time_l1c is not null;	select count(*) from vw_std where satellite_name = 'NOAA7' and blacklist=0 and start_time_l1c is null;	select count(*) from vw_std where satellite_name = 'NOAA7' and blacklist=1;	select count(*) from vw_std where satellite_name = 'NOAA7' and blacklist_reason = 'negative_orbit_length';	select count(*) from vw_std where satellite_name = 'NOAA7' and blacklist_reason = 'orbit_length_too_long';

Blacklist_reason	All Satellites (excluding: TIROSN, NOAA6, NOAA8, NOAA10)	Explanation
old	67	Blacklist 'old' orbits based on L1bFilename.
too_small	3921	Blacklist records, whose file size is smaller than a given threshold, based on L1bFilename.
too_long	31	Blacklist records which are longer than a given threshold, based on L1bFilename.
ground_station_duplicate	63	There are pairs of files in the archive, which only differ in C{dump} and C{size}. Find them and blacklist the smaller one. When both records have the same filesize, just blacklist the first one, based on L1bFilename

see column "redundant=1"	5473	Blacklist 'redundant' orbits, i.e. orbits which are completely covered by another orbit (needs neighbourhood), based on L1bFilename. sqlite3 -line AVHRR_GAC_archive_v2_newstats_post_overlap.sqlite3 "select count(*) from vw_std where satellite_name not like 'NOAA6' and satellite_name not like 'NOAA8' and satellite_name not like 'NOAA10' and satellite_name not like 'TIROSN' and blacklist=1 and redundant=1 and blacklist_reason not like 'bad_l1c_quality' and blacklist_reason not like 'too_long' "
orbit_length_too_long	1938	After pygac, the orbit duration is calculated based on the start- and end-timestamps from L1cFilename
negative_orbit_length	19	After pygac, there is a sanity check w.r.t. start- and end-timestamps taken from the L1cFilename
wrong_l1c_timestamp	26	During GAC_overlap.py there is a sanity check, which looks for ambiguous entries w.r.t. to start_time_l1c and end_time_l1c.
bad_l1c_quality	9609	NOAA-17 shows bad l1c quality at the end of lifetime; thus, all orbits blacklisted between 2010-03-01 and 2011-12-31
no_valid_l1c_data	3134	PyGAC did not provide a L1c orbit file
along_track_too_long	12	Diana found too long orbits while CLARA-A2 processing, i.e. y-dimension is too long.
	24293	TOTAL

Data in ECFS archive	AVHRR GAC L1B	AVHRR GAC L1C
Total size [TB]	15,07	19,42

Data are compressed using bunzip

Number of orbits, which have not been stored into ECFS archive due to invalid l1c timestamps in the filename

1985 84 GB (compressed)

pygac error messages, i.e. no valid L1c orbit created							These two columns should have same values for each satellite	
Platform	**STDOUT:Value error**	**STDOUT:ERROR: All data is masked out. Stop processing**	**TypeError: 'float' object is not iterable METOPA[TypeError: 'datetime.datetime' object has no attribute '__getitem__']**	**KeyError: 78**	**IndexError: index out of bounds**	**IndexError: Can't find tle data for noaaXX**	**Total number of missing orbits per satellite**	**Total number of missing L1c orbits**
NOAA7	258	28	0	0	0	0	286	96
NOAA9	115	31	0	0	0	0	146	146
NOAA11	102	64	0	0	4	0	170	144
NOAA12	141	20	0	0	0	0	161	66
NOAA14	24	276	11	0	7	7	325	102
NOAA15	15	2583	0	146	7	0	2751	824
NOAA16	6	48	0	0	0	0	54	54
NOAA17	218	182	0	0	0	0	400	13
NOAA18	224	5	0	0	6	0	235	19
NOAA19	221	5	0	0	6	0	232	17
METOPA	276	3	3	0	3	0	285	280
METOPB	161	0	0	0	28	0	189	165
Total number of error	1761	3245	14	146	61	7	5234	1926

sqlite3 -line AVHRR_GAC_archive_v2_post_overlap.sqlite3 "select satellite_name, filename, start_time_l1b, end_time_l1b, start_time_l1c, end_time_l1c, blacklist from vw_std where start_time_l1c='1983-06-21 21:02:00.500000'"

Mismatch @NOAA7	Total number of missing orbits per satellite	Total number of missing L1c orbits	Reason	Two different L1b filenames created the same L1C orbit, i.e. idential L1C filename
	286	96		

filename	NSS.GHRR.NC.D83172.S1921.E2106.B1028384.WI.gz	filename	NSS.GHRR.NC.D83172.S2102.E2217.B1028484.GC.gz
start_time_l1b	1983-06-21 19:21:00	start_time_l1b	1983-06-21 21:02:00
end_time_l1b	1983-06-21 21:06:00	end_time_l1b	1983-06-21 22:17:00
start_time_l1c	1983-06-21 21:02:00.500000	start_time_l1c	1983-06-21 21:02:00.500000
end_time_l1c	1983-06-21 22:17:05.500000	end_time_l1c	1983-06-21 22:17:05.500000
blacklist	1	blacklist	0
blacklist_reason	wrong_l1c_timestamp	blacklist_reason	None

sqlite3 -line AVHRR_GAC_archive_v2_post_overlap.sqlite3 "select * from vw_std where filename='NSS.GHRR.NN.D13014.S2340.E0135.B3944445.GC.gz'"

Mismatch @NOAA7	Total number of missing orbits per satellite	Total number of missing L1c orbits	Reason: scratch problem
	235	19	NOAA18/2013/20130109_20130116/pygac.1:IOError: [Errno 2] No such file or directory: '/scratch/ms/de/sf7/cschlund/GAC_PROC/ECFlow_AvhrrGacL1c_proc/input/NOAA18/2013-01-09_2013-01-16/NSS.GHRR.NN.D13014.S2340.E0135.B3944445.GC'

List of dates per satellite, which do not contain any L1C orbits, i. e. no data available for these days - TOTAL 3134 orbits

Platform	Year	Month	No L1c files for these days	Counter
NOAA7	1982	5	28, 29, 30, 31	1
NOAA7	1982	9	25, 26	2
NOAA7	1983	7	27, 28, 29, 30, 31	3
NOAA7	1983	8	1, 2, 6	4
NOAA7	1983	9	21, 22, 23, 24, 25, 26	5
NOAA7	1984	1	14, 15	6
NOAA7	1984	4	10	7
NOAA7	1984	7	23	8
NOAA7	1984	12	6	9
NOAA9	1986	3	14, 15	10
NOAA11	1994	9	14, 15, 16, 17, 18, 19, 20, 25, 28	11
NOAA11	1994	10	6, 8, 9, 10, 11, 12	12
NOAA12	1993	10	13, 14, 15, 16, 17, 18, 19	13
NOAA14	2001	1	1	14

NOAA14	2001	5	31	15
NOAA14	2001	12	17, 18, 19, 20, 21, 22, 23, 24, 25, 26, 27, 28, 29, 30, 31	16
NOAA14	2002	7	28	17
NOAA15	2000	7	11, 23, 24, 25, 26, 27, 29, 30	18
NOAA15	2000	8	2, 3, 4, 5, 7, 9, 11, 12, 13, 14, 16, 17, 18, 19, 20, 21, 22, 23, 24, 26, 27, 28, 31	19
NOAA15	2000	9	4, 18, 19, 20, 21, 23, 24, 25, 26, 28, 29	20
NOAA15	2000	10	1, 3, 4, 5, 6, 7, 8, 9, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24, 25, 26, 27, 28, 29, 31	21
NOAA15	2000	11	4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 23, 24, 25, 28	22
NOAA15	2000	12	1, 2, 3, 4, 5, 6, 7, 9, 10, 11, 12, 14, 15, 18, 22, 23, 25, 26, 27	23
NOAA15	2001	1	6, 7, 8, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 31	24
NOAA15	2001	2	1, 9, 10	25
NOAA15	2007	2	16, 17	26
NOAA15	2007	3	1, 2, 3, 8, 9, 10	27
NOAA17	2002	6	25, 26, 27, 28, 29, 30	28
NOAA17	2002	7	1, 2, 3, 4, 5, 6, 7, 8, 9	29
NOAA17	2010	10	7, 8	30
NOAA18	2005	5	20, 21, 22, 23, 24, 25, 26, 27, 28, 29, 30, 31	31
NOAA18	2005	6	1, 2, 3, 4	32
NOAA19	2009	2	6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21	33
METOPA	2007	9	18	34
METOPA	2008	3	20	35
METOPB	2013	4	10, 11, 12, 13, 14	36
METOPB	2013	5	17, 18, 19	37
METOPB	2014	10	17, 24, 25, 26, 27, 28	38
METOPB	2014	12	31	39
Total Orbits	3134			