

**ANNEX M to Critique of All NASA Mars Weather Data
with Emphasis on Pressure. (Updated on 8/27/2015)
One Martian Year of Revised MSL Weather Reports**

OVERVIEW. Annex M documents Mars Science Laboratory weather reports for its first Martian year (Sol 1 to 669). It also points how the data was revised and why it is often highly dubious.

Martian weather and [blue sky color](#) seen simply do not match the low (near vacuum) Martian air pressure advocated by NASA (6.1 millibars/610 Hectopascals) at areoid, the Martian equivalent of sea level. There are abundant dust devils, even on Arsia Mons to altitudes of 17 km above areoid, spiral storms with 10 km eye-walls above Arsia Mons. Dust storm opacity can cause darkness at noon. We have seen snow fall at the Phoenix lander, excessive aero braking, stratus clouds 13 km above areoid, and nighttime temperature drops that are comparable to what is seen in Montana. Massive sand dunes are moving and rover tracks are filling in with sand, without adequate winds seen to explain the sand movement with such low air pressure and density. Vikings 1 and 2 plus Mars Science Laboratory (MSL) showed consistent timing of daily pressure spikes. A close analysis of the MSL Year 1 meteorological data shown on Table 1 backs our assertion that NASA is seriously understating Martian air pressure. This could be due to pressure transducer design flaws like tiny unchangeable dust filters in the Tavis sensors used for Viking 1, Viking 2 and Mars Pathfinder and again in the Vaisala sensors for Phoenix and MSL. These filters likely clog on landing. The decision to send sensors with inadequate pressure ranges like the 11.5 millibar/1150 Hectopascal limit on MSL was also unwise for reasons we discuss below in conjunction with a mean pressure of 11.49 mbar first reported for Sol 370.

THE PEOPLE FACTOR - UNDERSTANDING MARS DATA OFTEN REQUIRES KNOWING THE PEOPLE BEHIND IT. We have interviewed many of them. Some are mentioned in this article, more are discussed in our Basic Report. While human error (we are being polite here) may explain the ludicrous pressures reported, there is also a possibility of deliberate disinformation. An example of such disinformation would be keeping the designer of the Vaisala sensor, Henriq Kahanpää of the Finnish Meteorological Institute (FMI), from being told about nearby heat sources and even the number of air access tubes and dust filters used in conjunction with his sensor. NASA used International Traffic in Arms Regulations (ITAR) as an excuse but if they didn't want to give design critical information to a foreigner they should have hired an American to build the sensor. That, of course, assumes that they were interested in learning the truth. The overall problems are discussed in [Sections 2.2 to 2.4 of our report](#) and in our PowerPoints.

UNDERSTANDING TABLE 1 AND IMPLICATIONS OF ITS DATA. Table 1 below shows how the weather at MSL varied for a Martian year between landing on August 6, 2012 (Sol 1) and Sol 669 on June 24, 2014. In several cases the Rover Environmental Monitoring Station (REMS) Team and NASA's Jet Propulsion Laboratory (JPL) as well as Critique of All NASA Mars Weather Data: By Barry S. Roffman and David A. Roffman

Ashima Research (who worked for JPL) altered their published data after directly hearing from our Mars Correct Team. This is documented in this Annex with printscreens captured before and after our objections to their data. Alterations included the deletion of all wind data on May 11, 2013, a day after JPL Public Relations Representative Guy Webster admitted to us that all wind speeds were wrong due to damage suffered to Weather Boom 1 on landing. Initially sunrise/sunset times for Gale Crater, Mars were only listed on reports by Ashima Research, and they were all wrong because they all showed a never changing sunrise at 6 am and sunset at 5 pm. The Martian day is never that short so close to the equator (4.59° South). [Approximate day length times were first calculated by Barry Roffman in our Mars Correct Team and then precisely calculated by David A. Roffman.](#) Relative humidity is always listed on REMS reports as N/A. We believe that relative humidity is at least in part listed as N/A because it would be affected by air pressure and NASA has that wrong, however [we discuss it in detail elsewhere on our web site.](#) **On Table 1 column subjects and color coding are as follows:**

Column A (Sol). The Martian day is about 39 minutes longer than the terrestrial day. Occasionally (at MSL Sols 34, 106, 179, 215, 252, 267, 288, 328, etc.) the REMS reports indicated 2 days forward but only 1 sol forward.

Columns B is solar longitude (Ls). MSL is in the Southern Hemisphere on Mars. The landing was at Ls 150 in winter. Ls 180 begins the spring there. Ls 270 starts summer, Ls 0 starts the fall. Ls 90 starts the winter.

Column C shows the date on Earth.

Columns D shows the original pressure reported by the REMS Team. The first pressure sent back was 705 Pascals which is 7.05 hPa or 7.05 millibars. No pressure this low was ever seen again and the REMS Team/JPL later deleted it and all other weather data for Sol 1. The next pressure given was on Sol 9. At 718 Pa it was also lower than any pressure seen again, and once again all data for that day was changed to Not Available. Of note are pressures for Sol 192 (940 Pa), Sol 200 (937 Pa) which were higher than anything they accepted after their revisions (shown in Column E). Both sol pressures were altered to N/A. Also very noteworthy were the original pressures for Sols 26 to 30 between September 1 and 5, 2012. All were between 742 and 747 hectopascals (hPa) which translates to 74,200 Pa up to 74,700 Pa. These pressures are equivalent to what would be seen on Earth at ski resorts in Colorado. The pressures were revised down by a factor 100 as is shown in Column E. So 747 hPa became 747 Pa, which is like replacing dollars with the same number of cents. While JPL may argue that the Earth-like pressures were due to typographical errors, the weather seen on Mars matches these pressures rather than the pressures given in Column E. As mentioned above Henriq Kahanpää was the designer of the pressure sensor for MSL. We know this guy. In response to an e-mail from us on December 15, 2009 he wrote back, "Your nose smelled also a real issue. The fact that we at **FMI did not know how our sensor was mounted in the spacecraft and how many filters there were** shows that the exchange of information between

NASA and the foreign subcontractors did not work optimally in this mission!" Why mention that here? Because Kahanpää was on the REMS Team. We find it hard to believe that he could for essentially for a week accidentally report to the world pressures that were 100 times too high. Given the dissatisfaction that he expressed about how his sensor was being used by NASA in 2009, we think it's plausible that in protest he deliberately published the higher figure because that is what is there on Mars. However, a transducer with a top measurable pressure of 11.5 mbar could not measure a pressure of 747 mbar. To measure that a substitution would have to have taken place with or without his assistance. While we cannot prove that an alternate sensor was available to fly on MSL, we can prove that the same CAD for Mars Pathfinder included two identical appearing pressure sensors - one with a top measurable pressure of 12 mbar (Tavis Dash Number 2) while the other on the CAD ([Tavis Dash Number 1](#)) [had a top measurable pressure of 1,034 mbar](#). See [Section 2.2](#) of our Report.

Further, the original data shown for Sols 369 to 371, and in particular for Sol 370 shows the mindset of JPL. It also reflects a specific response to a challenge that we phoned into JPL PR man Guy Webster. Sol 369 shows 865 Pa. **For Sol 370 the mean pressure was up to 1149 Pa (11.49 mbar) which is higher than any pressure recorded by any lander and not altered for Mars.** The following day the pressure was back at 865 Pa, exactly what it was two Martian days earlier. **The problem that we brought to JPL's attention was that the pressure measured was constrained by the fact that the sensor could not measure more than 11.5 mbar (1150 Pa), and that amount is likely just a rounded off figure estimate. So to have an average pressure of 1149 Pa means that the pressure had to be higher than the maximum pressure that could be measured by the Vaisala pressures sensor.** About 7 months after I brought up this issue the REMS Team and JPL simply eliminating the problem by altering the pressure for Sol 370 back down to 865 Pa to match what was given the day before and after the anomaly. In short, they lied. See Figure 1 for documentation of this allegation. As for the fact that NASA advertised sending a pressure sensor that we believed was inadequate, we specifically personally warned [Dr. Ashwin Vasavada](#) (MSL Project Scientist) about it just before he spoke at the International Mars Society Convention in Dallas, Texas on the night of August 6, 2011. We warned him again about it by phone in October, 2011. He indicated that he understood why we thought the Vaisala sensor was flawed, but it was evident that he was under pressure to launch the mission by December, 2011 lest they be required to wait another 2 years to get Mars back in position again. It was also evident that the mission priority was geology rather than meteorology.

Column E shows revised pressures given. The first pressure (listed for Sol 10) was 739 Pa. **The highest pressure after revisions was 925 Pa (9.25 mbar) on Sols 170 and 171. This was also exactly the highest pressure recorded in MSL Year 2 (Sol 846 at Ls 257).** We noticed a pattern in which after we highlighted in yellow sols for MSL Year 2 that had greater than a 7 Pa variance from Year 1, JPL often altered the pressure for the Year 2 date to under 7 mbar or less. **During MSL Year 2 from MSL**

Sol 670 through 1,082 there were only 36 sols (3.327%) in which the pressure for the same Ls position varied by more than 7 Pa (.07 mbar) from what it was in Year 1. On Table 1 below for Year 1 surviving changes for 10 Pa or more in pressure from one sol to the next or from the original pressure to the revised pressure are highlighted in lavender. There seemed to be a deliberate policy of publishing pressures that were in line with Viking 1 and 2 data (see Figure 5 found below Tables 1 and 2). We believe that what is seen is more likely the result of political rather than actual pressure.

Column F shows the maximum air temperature now given, often after the REMS Team/JPL revised temperatures that were above the freezing point of water (on Earth) to temperatures below freezing on Earth. With respect to the freezing point, from 0° C at 1 atm pressure it will increase up to 0.01° C at 0.006 atm (which is about the average pressure on Mars as given by NASA). This is the triple point of water. At pressures below this, water will never be liquid. It will change directly between solid and gas phase (sublimation). The temperature for this phase change, the sublimation point, will decrease as the pressure is further decreased.

Column G shows the revised maximum air temperatures. There seems to be a very disturbing effort was made by the REMS Team and JPL to alter almost all previous air temperatures that were above freezing to now read below freezing. We think this is more evidence of a deliberate effort made to paint Mars in a way that is less likely to procure funding for manned flight there. We used to assume that at least some of the pressure data was faked, but not the temperature data. Now we know that data manipulation, alteration, and manufacture has crept into all areas of MSL data.

Column H shows minimum air temperature.

Column I shows the air temperature range for each sol. On Earth temperatures can vary by 40 °C in deserts. In column I where the range is 58 °C or 59 °C green background coloring points that out. However, where temperature ranges are **57 °C or less** those sols are shown with blue backgrounds and white numbers.

- The National Park Service claims that **the world record in a diurnal temperature variation is 102 °F (57 °C)** (from 46 °F (8 °C) to −56 °F (−49 °C)) in [Browning, Montana](#) (elevation 4,377 feet/1,334 meters) on January 23 to 24, 1916.
- However the Montana Department of Environmental Quality claims that [Loma, Montana on January 15, 1972](#) (elevation 2,575 feet/785 meters) had a **variation of 103 °F (57 °C)** (from −54 °F (−48 °C) to 49 °F (9 °C)) in 1972 (see Andrew H. Horvitz, et al. [A National Temperature Record at Loma, Montana](#), National Weather Service, 2002. Accessed 2008-11-02). **So there were two days in the State of Montana where the temperature changed by 57 °C. Column I below shows that in the 669 sols of MSL being on Mars (MSL Year 1) there were 88 sols in which**

the temperature dropped by 57 °C or less from day to night. That's 13.15% of the sols. These numbers tend to support Earth-like pressure.

- While the two 57 °C diurnal temperature variations in Montana occurred in the winter, of the eighty-eight 57 °C or less diurnal temperature variations at Gale Crater, Mars 32 were in the winter, 2 were in spring, 6 were in summer and 48 were in autumn.

Column J shows temperature range divided by 40. This allows us to compare terrestrial deserts with Gale Crater, Mars. How much cooling occurs at night is related to the density of the atmosphere. Here we see the ratio of cooling on a Mars sol to the typical 40 °C cooling figure for Earth's deserts shown with a green background when that ratio is under 1.5. Obviously if we alter the divisor from 40 °C to 57 °C then 88 of the ratios will be altered to 1 or less than 1, meaning that Martian air pressure is indeed likely much higher than NASA claims.

Column K shows maximum ground temperature. As with terrestrial deserts, the ground on Mars heats more during the day than the air does, and it cools more at night than the air does. In Column K when the maximum ground temperature is given by REMS is above 0°C it is shown with red background or more. Because all pressures are above the triple point (611 Pa) the ground temperature is likely more important than the air temperature with respect to when water can be liquid on the surface.

Column L shows the original minimum ground temperature. When it is -90 °C or colder the background is in blue. Around Sol 443 the REMS Team/JPL elected to warm almost all these temperatures by 4 or 5 °C. The revised temperatures are in Column M. **The ground temperatures are not very precise.** Ground temperatures were supposed to be recorded with a [thermopile](#) on Boom 1 (which suffered some damage on landing). Assuming that Guy Webster (JPL P.R.) was correct when he told me that only the wind sensor was damaged on Boom1, the ground temperature sensor was supposed to view the Martian surface to the side of the rover through a filter with a passband of 8 to 14 microns. The requirement was to measure ground brightness temperature over the range from 150 to 300 K with [a resolution of 2 K and an accuracy of 10 K](#). REMS has made a number of changes to ground temperatures they post since they began doing so in 2013.

Column M shows the revised minimum ground temperature. After what looks close to search/replace efforts for the bulk of the first 443 days and a hiatus in data until Sol 486 with almost all original temperatures dropped by 4 or 5 °C, the remaining temperatures in Column M essentially are the same as those on Column L.

Column N shows the increase in temperature from the mast 1.5 meters above the ground down to the ground during the daylight hours. In column N anytime there is an increase in temperature of 20 °C or more this is indicated with an orange background. All ground temperatures were left off all the daily weather reports until July,

2013. In the first 669 sols of MSL (revised) weather reports there were 72 sols in which the value of temperature increases in column M was at least 20 °C.

Column O shows the decrease in temperature from the ground to the air at nights. If the data were valid we would expect similar heating or cooling to occur over the set distance from ground to boom. A quick survey of the data immediately shows that this was not found. In column N we see a variation in heating between 0 °C and over 30 °C. For nighttime cooling any variation from 11°C to 19°C is shown with a medium blue background. More than that is shown with a dark blue background. For night time cooling any variation over 10 °C is shown with a blue background.

Column P shows the ultraviolet radiation seen by MSL. All sols in MSL Year 1 have opacity listed as "sunny" which seems dubious. This appears to be true for MSL Year 2 also (at least up to Sol 1,065 on August 5, 2015). The international guidelines for UVI reporting established by the [World Health Organization \(WHO\)](#), has 11 numerical levels while only four levels are seen on the REMS reports (extreme was never seen). Low means low danger from the sun's UV rays for the average person, Moderate is moderate risk of harm from unprotected sun exposure, High means high risk of harm from unprotected sun exposure. Protection against skin and eye damage is needed, 8 to 10: Very High means that unprotected skin and eyes will be damaged and can burn quickly. During MSL Year 1 low UV is currently indicated for Sols 609, 619. During [MSL Year 2](#) there was low UV on Sols 838, 839, 840, 841, 843, 844, 800, 851, 853, 854, 855, 939, 1006, 1007, 1008, 1026 (1,021 was listed as low initially, then changed to high).

NOTE: There is much more to this article after the 669 sols of weather data in the Table below. Please scan down the page to see it.

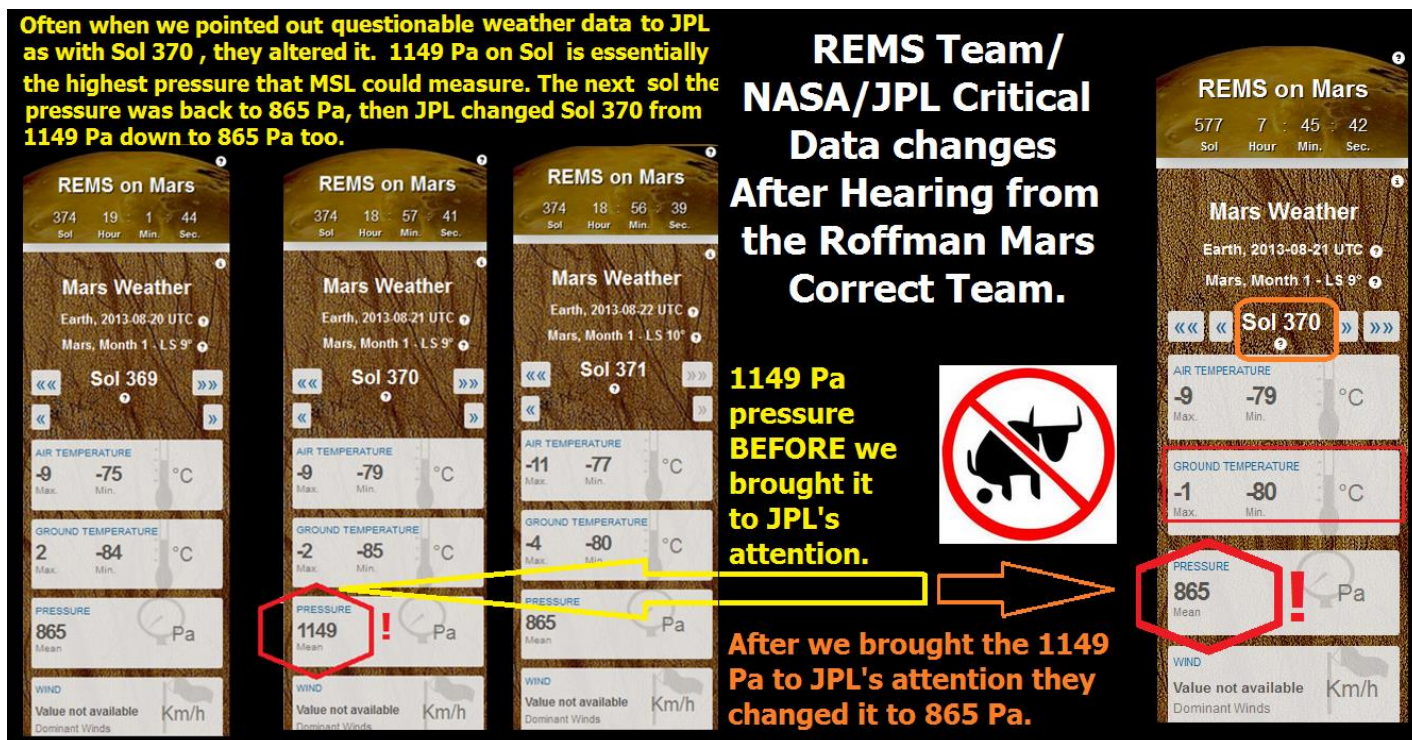


Figure 1 for Table 1 above - Changing Martian weather data from the REMS Team. Figure 2 below shows a major change to Sol 370's pressure that was made by JPL after we published the fact that the MSL's pressure sensor could not measure over 1150 Pa (11.5 mbar).

A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q
Sol	Ls	Date	Original Pa	Revised Pa	Max Air Temp °C	Orig. Max Temp °C	Min. Air Temp °C	Air temp Range °C	Range/40	Max ground Temp °C	Orig. Min. Ground Temp	Revised Min Ground Temp	Daytime increase in Temp °C	Night temp decrease Ground to Air °C	UV	Comments
1	150	8/7/2012	705	N/A	-6		-11	5		21	-27	N/A	27	-16	VH	
2	151	8/8/2012	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	
3	152	8/9/2012	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	
4	152	8/10/2012	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	
5	153	8/11/2012	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	
6	153	8/12/2012	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	
7	154	8/13/2012	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	
8	155	8/14/2012	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	
9	155	8/15/2012	There was a 718	N/A	-13		-65	52	1.3	17	-75	N/A	30	-10	N/A	
10	155	8/16/2012	N/A	739	-16		-75	59	1.475	8	-88	-83	24	-13	VH	
11	156	8/17/2012	N/A	740	-11		-76	65	1.625	9	-88	-83	20	-12	VH	
12	156	8/18/2012	N/A	741	-18		-76	58	1.45	8	-87	-82	26	-11	VH	
13	157	8/19/2012	N/A	732	-15		-74	59	1.475	8	-85	-80	23	-11	VH	Minimum pressure same as Ls 147
14	157	8/20/2012	N/A	740	-16		-74	58	1.45	8	-87	-82	24	-13	VH	
15	158	8/21/2012	N/A	740	-15		-78	63	1.575	8	-86	-82	23	-8	VH	
16	158	8/22/2012	730	740	0	-1	-77	77	1.925	9	-86	-81	9	-9	VH	
17	159	8/23/2012	740	742	-4	0	-76	72	1.8	6	-85	-81	10	-9	VH	
18	160	8/24/2012	761	N/A	-21		-73	52	1.3	2	-85	N/A	23	-12	N/A	INTERIM PRESSURE 761 Pa

A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q
Sol	Ls	Date	Original Pa	Revised Pa	Max Air Temp °C	Orig. Max Temp °C	Min. Air Temp °C	Air temp Range °C	Range/40	Max ground Temp °C	Orig. Min. Ground Temp	Revised Min Ground Temp	Daytime increase in Temp °C	Night temp decrease Ground to Air °C	UV	Comments
19	160	8/25/2012	719 (There was a 781 Pa pressure first published)	N/A	-3	-18	-61	58	1.45	7	-71	N/A	10	-10	N/A	INTERIM PRESSURE 719 Pa
20	161	8/26/2012	727	N/A	-1		-68	67	1.675	8	-81	N/A	9	-13	N/A	INTERIM PRESSURE 727 Pa
21	161	8/27/2012	790	741	-3	0	-74	71	1.775	7	-86	-81	10	-12	VH	
22	162	8/28/2012	740	742	-6	3	-74	68	1.7	8	-86	-81	14	-12	VH	
23	162	8/29/2012	740	741	-16	0	-75	59	1.475	8	-87	-81	24	-12	VH	
24	163	8/30/2012	740	742	-7	0	-75	68	1.7	6	-88	-83	13	-13	VH	
25	163	8/31/2012	N/A	743	-11		-75	64	1.6	6	-84	-79	17	-9	VH	
26	164	9/1/2012	74200	745	-14	2	-76	62	1.55	5	-87	-83	19	-11	VH	Sep 1 to 5, pressure units were hPa, then altered to Pa.
27	164	9/2/2012	74300	743	-15	-1	-75	60	1.5	5	-83	-79	20	-8	VH	
28	165	9/3/2012	74500	745	-15	-6	-81	66	1.65	5	-84	-79	20	-3	VH	
29	166	9/4/2012	74700	747	-2	-7	-77	75	1.875	6	-83	-78	8	-6	VH	
30	166	9/5/2012	74700	747	-3	-2	-74	71	1.775	6	-83	-80	9	-9	VH	See Figure 2 for Table 1 below.
31	167	9/6/2012	747	745	-23	-3	-74	51	1.275	1	-84	=80	24	-10	VH	

A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q
Sol	Ls	Date	Original Pa	Revised Pa	Max Air Temp °C	Orig. Max Temp °C	Min. Air Temp °C	Air temp Range °C	Range/40	Max ground Temp °C	Orig. Min. Ground Temp	Revised Min Ground Temp	Daytime increase in Temp °C	Night temp decrease Ground to Air °C	UV	Comments
32	167	9/7/2012	742	N/A	-2		-62	60	1.5	6	-72	N/A	8	-10	N/A	INTERIM PRESSURE 726
33	168	9/8/2012	748	748	-2		-73	71	1.775	5	-84	-80	7	-11	VH	
34	168	9/10/2012	748	748	1	0	-94	95	2.375	5	-83	-78	4	11	VH	
35	169	9/11/2012	799	749	-1	-2	-73	72	1.8	6	-83	-78	7	-10	VH	
36	169	9/12/2012	744	750	-1	5	-73	72	1.8	6	-82	-78	7	-9	VH	
37	170	9/13/2012	752	750	0	0	-73	73	1.825	6	-83	-78	6	-10	VH	
38	171	9/14/2012	748	750	-13	-3	-73	60	1.5	7	-82	-78	20	-9	VH	
39	171	9/15/2012	757	751	-8	-3	-75	67	1.675	7	-83	-79	15	-8	VH	
40	172	9/16/2012	804	753	-12	2	-75	63	1.575	7	-83	-79	19	-8	VH	
41	172	9/17/2012	752	753	-12	2	-75	63	1.575	7	-84	-79	19	-9	VH	
42	173	9/18/2012	755	754	-7	5	-75	68	1.7	7	-85	-80	14	-10	VH	
43	173	9/19/2012	756	756	-12	3	-74	62	1.55	9	-84	-80	21	-10	VH	
44	174	9/20/2012	754	757	-10	4	-75	65	1.625	13	-91	-86	23	-16	VH	
45	175	9/21/2012	757	758	-9	3	-74	65	1.625	11	-92	-87	20	-18	VH	
46	175	9/22/2012	759	758	-12	4	-74	62	1.55	13	-88	-83	25	-14	VH	
47	176	9/23/2012	758	758	-9	6	-75	66	1.65	13	-88	-83	22	-13	VH	
48	176	9/24/2012	758	759	0	4	-75	75	1.875	11	-89	-84	11	-14	VH	
49	177	9/25/2012	763	761	-10	4	-74	64	1.6	9	-86	-81	19	-12	VH	
50	177	9/26/2012	760	761	-10	0	-72	62	1.55	11	-80	-76	21	-8	VH	
51	178	9/27/2012	766	762	-7	3	-76	69	1.725	13	-88	-83	20	-12	VH	
52	179	9/28/2012	765	762	-7	7	-74	67	1.675	12	-89	-84	19	-15	VH	
53	179	9/29/2012	765	764	-5	5	-71	66	1.65	11	-86	-81	16	-15	VH	
54	180	9/30/2012	764	766	-9	5	-72	63	1.575	10	-82	-77	19	-10	VH	SPRING AT MSL AND

A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q
Sol	Ls	Date	Original Pa	Revised Pa	Max Air Temp °C	Orig. Max Temp °C	Min. Air Temp °C	Air temp Range °C	Range/40	Max ground Temp °C	Orig. Min. Ground Temp	Revised Min Ground Temp	Daytime increase in Temp °C	Night temp decrease Ground to Air °C	UV	Comments
																SOUTH POLE
55	180	10/1/2012	768	766	-2	-1	-74	72	1.8	10	-82	-78	12	-8	VH	
56	181	10/2/2012	770	768	-4	-3.8	-73	69	1.725	10	-85	-80	14	-12	VH	
57	181	10/3/2012	779	769	-3	-3.8	-73	70	1.75	12	-87	-82	15	-14	VH	
58	182	10/4/2012	779	769	-3	-3	-74	71	1.775	11	-87	-82	14	-13	VH	
59	183	10/5/2012	781	771	-1	-1	-76	75	1.875	11	-87	-82	12	-11	VH	
60	183	10/6/2012	785	772	-2	-2	-75	73	1.825	12	-89	-84	14	-14	VH	
61	184	10/7/2012	779	772	-2	-1	-72	70	1.75	12	-88	-83	14	-16	VH	
62	184	10/8/2012	782	774	-1	-1	-72	71	1.775	11	-87	-82	12	-15	VH	
63	185	10/9/2012	786	775	0	-1	-73	73	1.825	11	-86	-81	11	-13	VH	
64	186	10/10/2012	785	776	0	-1	-74	74	1.85	12	-87	-83	12	-13	VH	
65	186	10/11/2012	785	777	-2	-2	-72	70	1.75	12	-87	-82	14	-15	VH	
66	187	10/12/2012	781	778	-2	-5	-73	71	1.775	11	-88	-83	13	-15	VH	
67	187	10/13/2012	N/A	780	-6	-1	-73	67	1.675	13	-86	-81	19	-13	VH	
68	188	10/14/2012	N/A	781	-2		-71	69	1.725	12	-85	-80	14	-14	VH	
69	189	10/15/2012	N/A	778	0		-73	73	1.825	12	-87	-82	12	-14	H	
70	189	10/17/2012	785	783	-1	-2	-72	71	1.775	13	-87	-82	14	-15	VH	
71	190	10/18/2012	786	784	-2		-71	69	1.725	12	-86	-81	14	-15	VH	
72	190	10/19/2012	788	785	-2	0	-73	71	1.775	12	-87	-82	14	-14	VH	
73	191	10/20/2012	790	788	0	-2	-70	70	1.75	13	-88	-83	13	-18	VH	
74	192	10/21/2012	N/A	790	-5		-72	67	1.675	13	-88	-83	18	-16	VH	
75	192	10/22/2012	791	791	-1	-1	-73	72	1.8	12	-89	-84	13	-16	VH	
76	193	10/23/2012	791	792	-1	-1	-73	72	1.8	14	-88	-83	15	-15	VH	
77	193	10/24/2012	793	792	0	-1	-71	71	1.775	14	-88	-83	14	-17	VH	

A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q
Sol	Ls	Date	Original Pa	Revised Pa	Max Air Temp °C	Orig. Max Temp °C	Min. Air Temp °C	Air temp Range °C	Range/40	Max ground Temp °C	Orig. Min. Ground Temp	Revised Min Ground Temp	Daytime increase in Temp °C	Night temp decrease Ground to Air °C	UV	Comments
78	194	10/25/2012	794	793	0	0	-71	71	1.775	13	-87	-82	13	-16	VH	
79	195	10/26/2012	795.5	795	-1	-2	-73	72	1.8	13	-89	-84	14	-16	VH	
80	195	10/27/2012	797	796	-3	-1	-70	67	1.675	14	-86	-82	17	-16	VH	
81	196	10/28/2012	799	798	-2	-1.5	-72	70	1.75	13	-87	-82	15	-15	VH	
82	196	10/29/2012	798	799	0	-0.4	-72	72	1.8	13	-88	-83	13	-16	VH	
83	197	10/30/2012	800.51	801	0	-0.5	-72	72	1.8	15	-88	-83	15	-16	VH	
84	198	10/31/2012	800	801	0	-0.5	-70	70	1.75	15	-86	-82	15	-16	VH	
85	198	11/1/2012	805	805	-1	-0.9	-71	70	1.75	14	-86	-81	15	-15	VH	
86	199	11/2/2012	808	808	-4	-4	-71	67	1.675	15	-86	-81	19	-15	VH	
87	199	11/3/2012	808.7	808	-2	-4	-70	68	1.7	15	-86	-81	17	-16	VH	
88	200	11/4/2012	N/A	811	-2		-70	68	1.7	15	-87	-82	17	-17	VH	
89	201	11/5/2012	813.25	813	-1	-1	-73	72	1.8	15	-87	-82	16	-14	VH	
90	201	11/6/2012	814	813	0	-0.4	-71	71	1.775	16	-84	-80	16	-13	VH	
91	202	11/7/2012	818	817	-1	-0.8	-74	73	1.825	15	-86	-81	16	-12	VH	
92	202	11/8/2012	820.29	820	-1	0	-74	73	1.825	15	-87	-82	16	-13	VH	
93	203	11/9/2012	N/A	819	-1		-72	71	1.775	15	-86	-81	16	-14	VH	
94	204	11/10/2012	822.43	822	0		-70	70	1.75	15	-86	-81	15	-16	VH	
95	204	11/11/2012	815.53	822	0		-68	68	1.7	14	-84	-79	14	-16	VH	
96	205	11/12/2012	827	826	2	2	-71	73	1.825	15	-84	-79	13	-13	VH	
97	206	11/13/2012	828	828	-3		-68	65	1.625	14	-83	--79	17	-15	VH	
98	206	11/14/2012	829	828	-1		-68	67	1.675	15	-83	-79	16	-15	VH	
99	207	11/15/2012	829.59	829	-1	-1	-68	67	1.675	13	-80	-76	14	-12	VH	
100	207	11/16/2012	N/A	829	-1		-66	65	1.625	13	-81	-77	14	-15	VH	
101	208	11/17/2012	N/A	830	-2		-65	63	1.575	15	-81	-77	17	-16	VH	
102	209	11/18/2012	833.41	833	-3	8	-67	64	1.6	17	-80	-75	20	-13	VH	

A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q
Sol	Ls	Date	Original Pa	Revised Pa	Max Air Temp °C	Orig. Max Temp °C	Min. Air Temp °C	Air temp Range °C	Range/40	Max ground Temp °C	Orig. Min. Ground Temp	Revised Min Ground Temp	Daytime increase in Temp °C	Night temp decrease Ground to Air °C	UV	Comments
103	209	11/19/2012	N/A	836	-3		-66	63	1.575	18	-85	-80	21	-19	VH	
104	210	11/20/2012	839	838	-5	4.7	-67	62	1.55	17	-83	-78	22	-16	VH	
105	211	11/21/2012	N/A	839	-6		-66	60	1.5	17	-81	-77	23	-15	H	
106	211	11/23/2012	N/A	841	-8		-66	58	1.45	17	-82	-78	25	-16	H	
107	212	11/24/2012	N/A	844	-5		-66	61	1.525	16	-84	-80	21	-18	H	
108	212	11/25/2012	847	845	-4	5	-65	61	1.525	16	-82	-78	20	-17	H	
109	213	11/26/2012	N/A	844	-3		-64	61	1.525	16	-82	-78	19	-18	H	
110	214	11/27/2012	N/A	848	-5		-65	60	1.5	17	-82	-78	22	-17	H	
111	214	11/28/2012	N/A	849	-4		-66	62	1.55	17	-81	-77	21	-15	VH	
112	215	11/29/2012	852	852	-8	5	-65	57	1.425	18	-83	-79	26	-18	VH	
113	216	11/30/2012	850	857	-6	3	-66	60	1.5	15	-81	-77	21	-15	VH	
114	216	12/1/2012	857	857	-6	3	-69	63	1.575	18	-82	-78	24	-13	VH	
115	217	12/2/2012	857.26	857	-8	1	-66	58	1.45	16	-82	-78	24	-16	VH	
116	217	12/3/2012	857	859	-6	5	-67	61	1.525	17	-82	-78	23	-15	VH	
117	218	12/4/2012	862	861	-5	3.45	-66	61	1.525	18	-80	-76	23	-14	VH	
118	219	12/5/2012	864	864	-6	4.53	-65	59	1.475	18	-81	-77	24	-16	VH	
119	219	12/6/2012	866.3	866	-6	3.12	-66	60	1.5	18	-82	-78	24	-16	VH	
120	220	12/7/2012	867.5	867	-3	5.91	-67	64	1.6	16	-83	-79	19	-16	VH	
121	221	12/8/2012	865.4	869	0	1.31	-66	66	1.65	9	-71	-68	9	-5	H	
122	221	12/9/2012	N/A	869	-3		-65	62	1.55	3	-70	-66	6	-5	VH	
123	222	12/10/2012	875.96	875	-10	2.1	-66	56	1.4	2	-65	-62	12	1	H	
124	223	12/11/2012	876.84	876	-5	5.4	-66	61	1.525	5	-67	-63	10	-1	VH	
125	223	12/12/2012	875.25	880	-5	3.4	-68	63	1.575	6	-69	-66	11	-1	VH	
126	224	12/13/2012	880	880	-4	-5	-66	62	1.55	6	-75	-71	10	-9	VH	
127	224	12/14/2012	884	884	-1		-67	66	1.65	7	-75	-71	8	-8	VH	

A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q
Sol	Ls	Date	Original Pa	Revised Pa	Max Air Temp °C	Orig. Max Temp °C	Min. Air Temp °C	Air temp Range °C	Range/40	Max ground Temp °C	Orig. Min. Ground Temp	Revised Min Ground Temp	Daytime increase in Temp °C	Night temp decrease Ground to Air °C	UV	Comments
128	225	12/15/2012	884	883	-3	-4	-67	64	1.6	6	-73	-69	9	-6	H	
129	226	12/16/2012	894	886	-2	-4	-65	63	1.575	5	-73	-69	7	-8	H	
130	226	12/17/2012	889	888	-9	-6	-65	56	1.4	5	-73	-70	14	-8	H	
131	227	12/18/2012	888	889	-8	-7	-65	57	1.425	5	-73	-70	13	-8	VH	
132	228	12/19/2012	892.84	890	-6	-6.8	-65	59	1.475	4	-73	-69	10	-8	VH	
133	228	12/20/2012	891.21	891	1	0.6	-65	66	1.65	5	-72	-69	4	-7	VH	
134	229	12/21/2012	893.99	893	-1	-0.62	-67	66	1.65	7	-78	-74	8	-11	VH	
135	230	12/22/2012	894.34	894	-5	-4.66	-65	60	1.5	8	-76	-72	13	-11	VH	
136	230	12/23/2012	N/A	897	-1		-65	64	1.6	7	-78	-74	8	-13	VH	
137	231	12/24/2012	N/A	896	-1		-64	63	1.575	7	-75	-71	8	-11	VH	
138	232	12/25/2012	N/A	899	-1		-65	64	1.6	7	-75	-71	8	-10	VH	
139	232	12/26/2012	N/A	899	0		-66	66	1.65	8	-75	-71	8	-9	VH	
140	233	12/27/2012	N/A	903	-2		-66	64	1.6	7	-76	-71	9	-10	VH	
141	233	12/28/2012	N/A	904	-2		-64	62	1.55	7	-76	-72	9	-12	VH	
142	234	12/29/2012	N/A	906	0		-65	65	1.625	8	-77	-73	8	-12	VH	
143	235	12/31/2012	N/A	908	-2	-3	-63	61	1.525	8	-76	-72	10	-13	VH	
144	235	1/1/2013	N/A: Note there was also an 851 Pa pressure listed for Sol 144, but the Earth date was 12/31/2012.	907	2		-64	66	1.65	7	-75	-71	5	-11	VH	
145	236	1/2/2013	908	909	-1	-2	-64	63	1.575	6	-74	-70	7	-10	VH	

A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q
Sol	Ls	Date	Original Pa	Revised Pa	Max Air Temp °C	Orig. Max Temp °C	Min. Air Temp °C	Air temp Range °C	Range/40	Max ground Temp °C	Orig. Min. Ground Temp	Revised Min Ground Temp	Daytime increase in Temp °C	Night temp decrease Ground to Air °C	UV	Comments
146	237	1/3/2013	N/A	908	-1		-65	64	1.6	7	-76	-72	8	-11	VH	
147	237	1/4/2013	N/A	914	0		-65	65	1.625	5	-76	-72	5	-11	VH	
148	238	1/5/2013	N/A	912	3		-65	68	1.7	5	-74	-70	2	-9	VH	
149	239	1/6/2013	914	914	0	3	-65	65	1.625	4	-75	-71	4	-10	VH	
150	239	1/7/2013	913	913	-3	2	-64	61	1.525	5	-77	-73	8	-13	VH	
151	240	1/8/2013	915	915	-3		-65	62	1.55	4	-73	-69	7	-8	VH	
152	241	1/9/2013	914.5	914	1	3.85	-63	64	1.6	5	-73	-69	4	-10	VH	
153	241	1/10/2013	916	915	1	3	-65	66	1.65	4	-74	-70	3	-9	VH	
154	242	1/11/2013	917.7	917	-2	1.45	-65	63	1.575	4	-76	-72	6	-11	VH	
155	243	1/12/2013	917.5	917	0	2.15	-64	64	1.6	4	-74	-70	4	-10	VH	
156	243	1/13/2013	917.7	922	0	2	-65	65	1.625	4	-77	-73	4	-12	VH	
157	244	1/14/2013	920.7	920	-2	1.75	-64	62	1.55	5	-75	-71	7	-11	VH	
158	245	1/15/2013	922.99	922	-3	3	-66	63	1.575	3	-74	-70	6	-8	VH	
159	245	1/16/2013	918.47	918	-4	3.51	-65	61	1.525	4	-75	-72	8	-10	VH	
160	246	1/17/2013	919.82	919	-3		-67	64	1.6	5	-75	-72	8	-8	VH	
161	246	1/18/2013	920.3	919	-2	0	-65	63	1.575	5	-75	-71	7	-10	VH	
162	247	1/19/2013	920	919	-1	1	-65	64	1.6	7	-77	-72	8	-12	VH	
163	248	1/20/2013	920	919	-1	0	-65	64	1.6	5	-75	-71	6	-10	VH	
164	248	1/21/2013	919.46	919	-1	0	-64	63	1.575	7	-71	-68	8	-7	H	
165	249	1/22/2013	923.09	922	-3	0	-65	62	1.55	4	-72	-69	7	-7	H	
166	250	1/23/2013	922	922	-5	3	-65	60	1.5	3	-71	-67	8	-6	H	
167	250	1/24/2013	921	920	-3	4	-65	62	1.55	5	-73	-69	8	-8	H	
168	251	1/25/2013	924	923	1	5	-66	67	1.675	6	-73	-69	5	-7	H	
169	252	1/26/2013	923	922	0	4	-66	66	1.65	5	-74	-70	5	-8	H	
170	252	1/27/2013	N/A	925	0		-66	66	1.65	5	-73	-69	5	-7	H	

A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q
Sol	Ls	Date	Original Pa	Revised Pa	Max Air Temp °C	Orig. Max Temp °C	Min. Air Temp °C	Air temp Range °C	Range/40	Max ground Temp °C	Orig. Min. Ground Temp	Revised Min Ground Temp	Daytime increase in Temp °C	Night temp decrease Ground to Air °C	UV	Comments

171	253	1/28/2013	N/A	925	1	6	-67	68	1.7	5	-75	-71	4	-8	H	925 Pa is highest pressure not retracted. Also seen on Sol 846 in Year 2.
172	254	1/29/2013	925	923	0	6	-67	67	1.675	6	-74	-71	6	-7	H	
173	254	1/30/2013	924	920	0	5	-67	67	1.675	5	-75	-71	5	-8	H	
174	255	1/31/2013	924.7	921	0	5	-67	67	1.675	7	-75	-71	7	-8	H	
175	256	2/1/2013	N/A	921	-4		-68	64	1.6	5	-74	-70	9	-6	H	
176	256	2/2/2013	919	920	0	5	-67	67	1.675	5	-73	-69	5	-6	H	
177	257	2/3/2013	922.35	921	-1	5.2	-66	65	1.625	5	-73	-69	6	-7	H	
178	258	2/4/2013	921.31	920	-2		-66	64	1.6	5	-74	-71	7	-8	H	
179	258	2/6/2013	920	920	-7	5	-66	59	1.475	4	-77	-72	11	-11	H	
180	259	2/7/2013	NR	919	-1	4	-67	66	1.65	5	-74	-70	6	-7	H	
181	260	2/8/2013	921.96	918	1	N/A	-67	68	1.7	5	-74	-70	4	-7	H	
182	260	2/9/2013	N/A	921	0	6	-67	67	1.675	7	-75	-70	7	-8	H	
183	261	2/10/2013	920	921	-1		-67	66	1.65	5	-76	-72	6	-9	H	
184	261	2/11/2013	923	923	0	3	-67	67	1.675	5	-75	-71	5	-8	H	
185	263	2/12/2013	N/A	923	-5	4	-67	62	1.55	7	-76	-72	12	-9	H	
186	263	2/13/2013	N/A	922	-2	4	-66	64	1.6	4	-75	-71	6	-9	H	
187	264	2/14/2013	920.5	921	-1	6	-67	66	1.65	6	-77	-73	7	-10	H	
188	264	2/15/2013	920	920	-3	2	-68	65	1.625	6	-75	-72	9	-7	VH	
189	265	2/16/2013	921.09	920	-2		-68	66	1.65	5	-75	-71	7	-7	H	
190	265	2/17/2013	918	917	-3		-66	63	1.575	6	-76	-72	9	-10	H	

A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q
Sol	Ls	Date	Original Pa	Revised Pa	Max Air Temp °C	Orig. Max Temp °C	Min. Air Temp °C	Air temp Range °C	Range/40	Max ground Temp °C	Orig. Min. Ground Temp	Revised Min Ground Temp	Daytime increase in Temp °C	Night temp decrease Ground to Air °C	UV	Comments
191	266	2/18/2013	921	921	-3		-67	64	1.6	6	-75	-71	9	-8	VH	
192	267	2/19/2013	940	N/A	-16		-68	52	1.3	7	-1 changed to N/A	N/A	23	67	N/A	WAS 940 Pa ON INTERIM
193	267	2/20/2013	N/A	N/A	NO REPORT			NO REPORT	NO REPORT			N/A	#VALUE!	0	N/A	
194	268	2/21/2013	N/A	N/A	NO REPORT			NO REPORT	NO REPORT			N/A	NO REPORT	0	N/A	
195	269	2/22/2013	886	N/A	1		-53	54	1.35	4	-61	N/A	3	-8	N/A	WAS 886 ON INTERIM
196	269	2/23/2013	N/A	916	-3		-66	63	1.575	6	-74	-70	9	-8	H	
197	270 Summer	2/24/2013	915.8	915	-3		-68	65	1.625	5	-75	-72	8	-7	H	SUMMER AT SOUTH POLE
198	271	2/25/2013	914.34	914	-2	5	-67	65	1.625	5	-74	-70	7	-7	H	
199	271	2/26/2013	917	917	0	6	-66	66	1.65	3	-75	-71	3	-9	H	
200	272	2/27/2013	937	N/A	-21		-68	47	1.175	2	-75	N/A	23	-7	N/A	WAS 937 Pa ON INTERIM
201		2/28/2013	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	
202		3/1/2013	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	
203		3/2/2013	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	
204		3/3/2013	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	
205		3/4/2013	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	
206		3/5/2013	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	
207		3/6/2013	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	
208		3/7/2013	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	
209		3/8/2013	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	

A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q
Sol	Ls	Date	Original Pa	Revised Pa	Max Air Temp °C	Orig. Max Temp °C	Min. Air Temp °C	Air temp Range °C	Range/40	Max ground Temp °C	Orig. Min. Ground Temp	Revised Min Ground Temp	Daytime increase in Temp °C	Night temp decrease Ground to Air °C	UV	Comments
210		3/9/2013	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	
211		3/10/2013	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	
212		3/11/2013	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	
213		3/12/2013	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	
214		3/13/2013	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	
215	281	3/15/2013	874	N/A	-4		-28	24	0.6	7	-4	N/A	11	24	N/A	WAS 874 Pa ON INTERIM
216		3/16/2013	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	
217		3/17/2013	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	
218		3/18/2013	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	
219		3/19/2013	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	
220		3/20/2013	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	
221		3/21/2013	918	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	
222	286	3/22/2013	868	N/A	-3		-54	51	1.275	6	-59	N/A	9	-5	N/A	WAS 868 Pa ON INTERIM
223	287	3/23/2013	895	895	-5		-71	66	1.65	6	-76	-72	11	-5	VH	
224	287	3/24/2013	N/A	894	-1	3	-69	68	1.7	6	-76	-71	7	-7	VH	
225	288	3/25/2013	894.65	894	-8	1	-71	63	1.575	6	-76	-72	14	-5	VH	
226	288	3/26/2013	892.9	894	1	4	-70	71	1.775	5	-75	-71	4	-5	VH	
227	289	3/27/2013	894.27	892	4	5	-70	74	1.85	6	-76	-72	2	-6	VH	
228	290	3/28/2013	894.6	894	3	2	-71	74	1.85	7	-75	-71	4	-4	VH	
229	290	3/29/2013	N/A	894	-4	1	-69	65	1.625	6	-74	-70	10	-5	VH	
230	291	3/30/2013	890.7	888	0		-69	69	1.725	6	-76	-72	6	-7	VH	
231	292	3/31/2013	888.32	890	-6	2	-71	65	1.625	6	-77	-73	12	-6	VH	

A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q
Sol	Ls	Date	Original Pa	Revised Pa	Max Air Temp °C	Orig. Max Temp °C	Min. Air Temp °C	Air temp Range °C	Range/40	Max ground Temp °C	Orig. Min. Ground Temp	Revised Min Ground Temp	Daytime increase in Temp °C	Night temp decrease Ground to Air °C	UV	Comments
232	292	4/1/2013	890.2	888	-5	2	-69	64	1.6	6	-76	-72	11	-7	VH	
233	293	4/2/2013	889.18	889	-3	5	-69	66	1.65	6	-77	-73	9	-8	VH	
234	293	4/3/2013	890	890	-4		-69	65	1.625	5	-77	-73	9	-8	VH	
235	294	4/4/2013	N/A	886	0		-70	70	1.75	6	-77	-73	6	-7	VH	
236	295	4/5/2013	N/A	886	-3		-72	69	1.725	6	-76	-72	9	-4	VH	
237	295	4/6/2013	N/A	883	-5		-71	66	1.65	5	-77	-73	10	-6	VH	
238	296	4/7/2013	N/A	885	-2		-70	68	1.7	6	-76	-72	8	-6	VH	
239	297	4/8/2013	N/A	885	-1		-73	72	1.8	5	-77	-73	6	-4	VH	
240	297	4/9/2013	N/A	884	-6		-70	64	1.6	5	-76	-72	11	-6	VH	
241	298	4/10/2013	N/A	884	0		-72	72	1.8	4	-77	-73	4	-5	VH	
242	298	4/11/2013	N/A	881	-7		-70	63	1.575	6	-77	-72	13	-7	VH	
243	299	4/12/2013	N/A	884	-7		-71	64	1.6	5	-77	-73	12	-6	VH	
244	300	4/13/2013	N/A	878	-6		-69	63	1.575	6	-76	-72	12	-7	VH	
245	300	4/14/2013	N/A	879	-6		-70	64	1.6	5	-76	-72	11	-6	VH	
246	301	4/15/2013	N/A	878	-1		-73	72	1.8	6	-77	-73	7	-4	VH	
247	301	4/16/2013	N/A	873	-4		-71	67	1.675	5	-77	-73	9	-6	VH	
248	302	4/17/2013	N/A	877	-4		-70	66	1.65	3	-75	-71	7	-5	H	
249	303	4/18/2013	N/A	873	-3		-69	66	1.65	4	-77	-72	7	-8	H	
250	303	4/19/2013	N/A	877	-2		-70	68	1.7	4	-76	-72	6	-6	VH	
251	304	4/20/2013	N/A	876	-2		-71	69	1.725	6	-77	-73	8	-6	VH	
252	304	4/22/2013	N/A	874	-8		-71	63	1.575	5	-77	-72	13	-6	VH	
253	305	4/23/2013	N/A	877	-6		-71	65	1.625	4	-77	-73	10	-6	VH	
254	306	4/24/2013	N/A	871	-3		-70	67	1.675	4	-77	-73	7	-7	VH	
255	306	4/25/2013	N/A	877	-5		-69	64	1.6	5	-77	-72	10	-8	VH	
256	307	4/26/2013	N/A	871	-2		-70	68	1.7	4	-77	-73	6	-7	VH	

A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q
Sol	Ls	Date	Original Pa	Revised Pa	Max Air Temp °C	Orig. Max Temp °C	Min. Air Temp °C	Air temp Range °C	Range/40	Max ground Temp °C	Orig. Min. Ground Temp	Revised Min Ground Temp	Daytime increase in Temp °C	Night temp decrease Ground to Air °C	UV	Comments
257	308	4/27/2013	N/A	871	-1		-70	69	1.725	4	-77	-73	5	-7	VH	
258	308	4/28/2013	N/A	869	-9		-71	62	1.55	5	-77	-73	14	-6	VH	
259	309	4/29/2013	N/A	871	-3		-72	69	1.725	5	-77	-73	8	-5	H	
260	309	4/30/2013	N/A	875	-11		-70	59	1.475	2	-76	-72	13	-6	H	
261	310	5/1/2013	868.05	868	-4		-70	66	1.65	4	-77	-73	8	-7	H	
262	311	5/2/2013	900	N/A	-22		-71	49	1.225	-2	-76	N/A	20	-5	N/A	WAS 900 Pa ON INTERIM
263		5/3/2013	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	
264		5/4/2013	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	
265		5/5/2013	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	
266		5/6/2013	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	
267	313	5/7/2013	864	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	
268	314	5/8/2013	864.3	864	-5		-70	65	1.625	2	-75	-71	7	-5	H	
269	315	5/9/2013	866.21	866	-3		-70	67	1.675	2	-74	-71	5	-4	H	
270	315	5/10/2013	N/A	863	-6		-67	61	1.525	1	-75	-71	7	-8	H	
271	316	5/11/2013	N/A	864	-6		-69	63	1.575	2	-74	-70	8	-5	H	
272	316	5/12/2013	N/A	864	-5		-71	66	1.65	-2	-76	-72	3	-5	H	
273	317	5/13/2013	N/A	861	-4		-70	66	1.65	-2	-71	-67	2	-1	H	
274	318	5/14/2013	865	861	-1		-68	67	1.675	-2	-72	-68	-1	-4	H	
275	318	5/15/2013	N/A	860	-6		-67	61	1.525	-2	-72	-68	4	-5	H	
276	319	5/16/2013	864	858	-4		-69	65	1.625	-1	-74	-71	3	-5	H	
277	319	5/17/2013	N/A	857	-4		-69	65	1.625	-2	-73	-69	2	-4	H	
278	320	5/18/2013	856.28	855	-3		-67	64	1.6	-2	-71	-67	1	-4	H	
279	321	5/19/2013	856	856	-5		-68	63	1.575	-2	-71	-68	3	-3	H	

A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q
Sol	Ls	Date	Original Pa	Revised Pa	Max Air Temp °C	Orig. Max Temp °C	Min. Air Temp °C	Air temp Range °C	Range/40	Max ground Temp °C	Orig. Min. Ground Temp	Revised Min Ground Temp	Daytime increase in Temp °C	Night temp decrease Ground to Air °C	UV	Comments
280	321	5/20/2013	855	856	-4		-69	65	1.625	0	-74	-70	4	-5	H	
281	322	5/21/2013	855.5	855	-2		-68	66	1.65	-1	-73	-70	1	-5	H	
282	322	5/22/2013	N/A	856	-2		-72	70	1.75	-1	-74	-70	1	-2	H	
283	323	5/23/2013	855.88	854	-4		-68	64	1.6	0	-74	-70	4	-6	H	
284	323	5/24/2013	N/A	854	-3		-71	68	1.7	-2	-74	-70	1	-3	H	
285	324	5/25/2013	852	852	-5		-70	65	1.625	0	-75	-71	5	-5	H	
286	325	5/26/2013	N/A	854	-2		-71	69	1.725	-1	-74	-70	1	-3	H	
287	325	5/27/2013	853.68	856	-3		-72	69	1.725	-2	-73	-69	1	-1	H	
288	326	5/29/2013	854.2	854	-4		-69	65	1.625	-1	-74	-70	3	-5	H	
289	326	5/30/2013	N/A	854	-3		-71	68	1.7	-1	-74	-70	2	-3	H	
290	327	5/31/2013	850	853	-3		-71	68	1.7	-1	-75	-71	2	-4	H	
291	327	6/1/2013	N/A	853	-4		-70	66	1.65	-1	-74	-70	3	-4	H	
292	328	6/2/2013	N/A	853	-1		-71	70	1.75	-2	-75	-71	-1	-4	H	
293	329	6/3/2013	850	850	-4		-72	68	1.7	0	-76	-72	4	-4	H	
294	329	6/4/2013	852	852	-4		-72	68	1.7	-1	-76	-71	3	-4	H	
295	330	6/5/2013	852	853	-15		-71	56	1.4	-2	-75	-71	13	-4	H	
296	330	6/6/2013	850	850	-9		-71	62	1.55	0	-77	-73	9	-6	H	
297	331	6/7/2013	N/A	849	-7		-72	65	1.625	1	-77	-73	8	-5	H	
298	331	6/8/2013	N/A	850	-3		-72	69	1.725	2	-80	-76	5	-8	H	
299	332	6/9/2013	851	849	-9		-71	62	1.55	-2	-80	-76	7	-9	H	
300	333	6/10/2013	852	852	-8		-72	64	1.6	-3	-78	-73	5	-6	H	
301	333	6/11/2013	N/A	852	-6		-73	67	1.675	-5	-76	-72	1	-3	H	
302	334	6/12/2013	N/A	850	-3		-71	68	1.7	0	-73	-69	3	-2	H	
303	334	6/13/2013	N/A	849	-8		-71	63	1.575	1	-78	-74	9	-7	H	
304	335	6/14/2013	N/A	848	-6		-70	64	1.6	1	-77	-72	7	-7	H	

A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q
Sol	Ls	Date	Original Pa	Revised Pa	Max Air Temp °C	Orig. Max Temp °C	Min. Air Temp °C	Air temp Range °C	Range/40	Max ground Temp °C	Orig. Min. Ground Temp	Revised Min Ground Temp	Daytime increase in Temp °C	Night temp decrease Ground to Air °C	UV	Comments
305	335	6/15/2013	N/A	847	-5		-71	66	1.65	1	-78	-74	6	-7	H	
306	336	6/16/2013	N/A	848	-8		-71	63	1.575	1	-79	-75	9	-8	H	
307	336	6/17/2013	N/A	851	-8		-72	64	1.6	-4	-79	-75	4	-7	H	
308	337	6/18/2013	N/A	850	-5		-73	68	1.7	-2	-73	-69	3	0	H	
309	338	6/19/2013	N/A	848	-7		-72	65	1.625	-3	-75	-71	4	-3	H	
310	338	6/20/2013	N/A	849	-9	-71	-118	109 revised to 62	2.725 revised to 1.55	-2	-73	-69	7	45 revised to -2	H	Air low changed from -118 to -71
311	339	6/21/2013	N/A	846	-8		-74	66	1.65	-3	-74	-70	5	0	H	
312	340	6/22/2013	N/A	845	-11		-71	60	1.5	-2	-74	-70	9	-3	H	
313	340	6/23/2013	N/A	849	-14		-77	63	1.575	1	-74	-70	15	3	H	
314	340	6/24/2013	N/A	848	-11		-73	62	1.55	2	-77	-73	13	-4	H	
315	341	6/25/2013	N/A	850	-10		-74	64	1.6	2	-77	-72	12	-3	H	
316	341	6/26/2013	N/A	851	-16		-74	58	1.45	2	-77	-72	18	-3	H	
317	342	6/27/2013	N/A	849	-4		-72	68	1.7	1	-77	-73	5	-5	H	
318	342	6/28/2013	N/A	849	-4		-72	68	1.7	2	-82	-77	6	-10	H	
319	343	6/29/2013	N/A	847	-3		-73	70	1.75	4	-80	-76	7	-7	H	
320	344	6/30/2013	N/A	846	-4		-71	67	1.675	3	-77	-76	7	-6	H	
321	344	7/1/2013	N/A	847	-5		-75	70	1.75	2	-80	-76	7	-5	H	
322	345	7/2/2013	N/A	849	-5		-74	69	1.725	3	-80	-76	8	-6	H	
323	345	7/3/2013	N/A	847	-6		-74	68	1.7	3	-82	-78	9	-8	H	
324	346	7/4/2013	N/A	850	-8		-75	67	1.675	7	-84	-79	15	-9	H	
325	346	7/6/2013	N/A	847	-8	N/A	-74	66	1.65	7	-85	-80	15	-11	H	
326	347	7/7/2013	N/A	848	-5	N/A	-72	67	1.675	5	-85	-80	10	-13	H	
327	347	7/8/2013	N/A	848	-8	N/A	-74	66	1.65	6	-84	-79	14	-10	VH	

A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q
Sol	Ls	Date	Original Pa	Revised Pa	Max Air Temp °C	Orig. Max Temp °C	Min. Air Temp °C	Air temp Range °C	Range/40	Max ground Temp °C	Orig. Min. Ground Temp	Revised Min Ground Temp	Daytime increase in Temp °C	Night temp decrease Ground to Air °C	UV	Comments
328	348	7/9/2013	N/A	847			-75	75	1.875	7	-91	-86	7	-16	H	
329	348	7/10/2013	N/A	847	-7		-74	67	1.675	6	-93	-87	13	-19	H	
330	349	7/11/2013	N/A	848	-5		-75	70	1.75	7	-91	-85	12	-16	H	
331	349	7/12/2013	N/A	848	-3	N/A	-74	71	1.775	5	-90	-85	8	-16	H	
332	350	7/13/2013	N/A	849	-5	N/A	-76	71	1.775	3	-88	-83	8	-12	H	
333	350	7/14/2013	N/A	849	-5		-75	70	1.75	2	-89	-83	7	-14	H	
334	351	7/15/2013	N/A	852	-6	N/A	-74	68	1.7	-1	-83	-78	5	-9	H	
335	352	7/16/2013	N/A	852	-7	N/A	-76	69	1.725	4	-85	-81	11	-9	H	
336	352	7/17/2013	N/A	852	-8	N/A	-76	68	1.7	4	-88	-83	12	-12	H	
337	353	7/18/2013	N/A	853	-7	N/A	-75	68	1.7	3	-88	-83	10	-13	H	
338	353	7/19/2013	N/A	848	-7	N/A	-78	71	1.775	2	-86	-81	9	-8	H	
339	354	7/20/2013	N/A	849	-8	N/A	-76	68	1.7	2	-86	-81	10	-10	H	
340	354	7/21/2013	N/A	851	-6	N/A	-76	70	1.75	4	-84	-79	10	-8	H	
341	354	7/22/2013	N/A	852	-6	N/A	-77	71	1.775	3	-88	-83	9	-11	H	
342	355	7/23/2013	N/A	851	-7	N/A	-76	69	1.725	2	-89	-84	9	-13	H	
343	356	7/24/2013	N/A	850	-11	N/A	-77	66	1.65	2	-86	-81	13	-9	H	
344	356	7/25/2013	N/A	851	-6	N/A	-77	71	1.775	2	-86	-81	8	-9	H	
345	357	7/26/2013	N/A	853	-7	N/A	-77	70	1.75	2	-87	-82	9	-10	H	
346	357	7/27/2013	N/A	853	-7	N/A	-76	69	1.725	1	-86	-82	8	-10	H	
347	358	7/28/2013	N/A	851	-9	N/A	-77	68	1.7	1	-87	-82	10	-10	H	
348	358	7/29/2013	N/A	850	-8	N/A	-74	66	1.65	1	-85	-80	9	-11	H	
349	359	7/30/2013	N/A	852	-12	N/A	-75	63	1.575	-2	-86	-80	10	-11	H	
350	359	7/31/2013	N/A	853	-6	N/A	-76	70	1.75	-1	-82	-78	5	-6	H	
351	0 Fall	8/1/2013	N/A	853	-12	N/A	-75	63	1.575	-4	-82	-78	8	-7	H	
352	0 Fall	8/2/2013	N/A	854	-9	N/A	-77	68	1.7	-3	-79	-75	6	-2	H	

A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q
Sol	Ls	Date	Original Pa	Revised Pa	Max Air Temp °C	Orig. Max Temp °C	Min. Air Temp °C	Air temp Range °C	Range/40	Max ground Temp °C	Orig. Min. Ground Temp	Revised Min Ground Temp	Daytime increase in Temp °C	Night temp decrease Ground to Air °C	UV	Comments
353	1	8/3/2013	N/A	855	-8	N/A	-75	67	1.675	-5	-80	-76	3	-5	H	
354	1	8/4/2013	N/A	857	-13	N/A	-75	62	1.55	-2	-80	-76	11	-5	H	
355	2	8/5/2013	N/A	857	-7	N/A	-75	68	1.7	-1	-86	-81	6	-11	H	
356	2	8/6/2013	N/A	856	-7	N/A	-77	70	1.75	-2	-83	-79	5	-6	H	
357	3	8/7/2013	N/A	857	-7	N/A	-76	69	1.725	-2	-83	-78	5	-7	H	
358	3	8/8/2013	N/A	N/A	-8	N/A	-75	67	1.675	-1	-83	N/A	7	-8	N/A	
359	4	8/9/2013	N/A	N/A		N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	INTERIM WAS 870 Pa
360	4	8/10/2013	N/A	N/A		N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	
361	5	8/11/2013	N/A	N/A		N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	
362	5	8/12/2013	N/A	N/A		N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	
363	6	8/13/2013	N/A	N/A		N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	
364	6	8/14/2013	N/A	N/A		N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	
365	7	8/16/2013	839	N/A	-13	N/A	-62	49	1.225	0	-70	N/A	13	-8	H	INTERIM WAS 839 Pa
366	7	8/17/2013	N/A	861	-12	N/A	-76	64	1.6	-3	-87	-82	9	-11	H	
367	8	8/18/2013	N/A	862	-9	N/A	-76	67	1.675	-3	-86	-81	6	-10	H	
368	8	8/19/2013	N/A	863	-9	N/A	-77	68	1.7	-3	-86	-81	6	-9	H	
369	9	8/20/2013	N/A	865	-9	N/A	-75	66	1.65	2	-84	-80	11	-9	H	
370	9	8/21/2013	1149	865	-9	N/A	-79	70	1.75	-2	-85	-80	7	-6	H	INTERIM WAS 1149 Pa See Figure 1 for Table 1 above.

A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q
Sol	Ls	Date	Original Pa	Revised Pa	Max Air Temp °C	Orig. Max Temp °C	Min. Air Temp °C	Air temp Range °C	Range/40	Max ground Temp °C	Orig. Min. Ground Temp	Revised Min Ground Temp	Daytime increase in Temp °C	Night temp decrease Ground to Air °C	UV	Comments
371	10	8/22/2013	N/A	865	-11	N/A	-77	66	1.65	-4	-80	-76	7	-3	H	
372	10	8/23/2013	N/A	866	-9	N/A	-76	67	1.675	-1	-87	-82	8	-11	H	
373	11	8/24/2013	N/A	866	-8	N/A	-79	71	1.775	-1	-91	-85	7	-12	H	
374	11	8/25/2013	N/A	866	-9	N/A	-79	70	1.75	-1	-89	-84	8	-10	H	
375	12	8/26/2013	N/A	867	-9	N/A	-77	68	1.7	-2	-88	-83	7	-11	H	
376	12	8/27/2013	N/A	870	-11	N/A	-77	66	1.65	-3	-88	-82	8	-11	H	
377	13	8/28/2013	N/A	870	-12	N/A	-78	66	1.65	0	-91	-86	12	-13	H	
378	13	8/29/2013	N/A	869	-18	N/A	-78	60	1.5	-5	-85	-80	13	-7	H	
379	14	8/30/2013	N/A	870	-12	N/A	-79	67	1.675	-12	-89	-84	0	-10	H	
380	14	8/31/2013	N/A	870	-13	N/A	-79	66	1.65	-5	-87	-82	8	-8	H	
381	15	9/1/2013	N/A	871	-13	N/A	-79	66	1.65	-4	-86	-81	9	-7	H	
382	15	9/2/2013	N/A	872	-14	N/A	-76	62	1.55	-5	-86	-81	9	-10	H	
383	16	9/3/2013	N/A	874	-12	N/A	-77	65	1.625	-7	-86	-81	5	-9	H	
384	16	9/4/2013	N/A	875	-12	N/A	-77	65	1.625	-5	-89	-84	7	-12	H	
385	17	9/5/2013	N/A	874	-12	N/A	-78	66	1.65	-4	-86	-81	8	-8	H	
386	17	9/6/2013	N/A	873	-12	N/A	-77	65	1.625	-8	-82	-78	4	-5	H	
387	18	9/7/2013	N/A	874	-13	N/A	-78	65	1.625	-8	-83	-78	5	-5	H	
388	18	9/8/2013	N/A	875	-13	N/A	-79	66	1.65	-7	-84	-79	6	-5	H	
389	19	9/9/2013	N/A	875	-14	N/A	-79	65	1.625	-8	-82	-78	6	-3	H	
390	19	9/10/2013	N/A	875	-16	N/A	-78	62	1.55	-2	-84	-79	14	-6	H	
391	20	9/11/2013	N/A	875	-17	N/A	-78	61	1.525	-10	-80	-75	7	-2	H	
392	20	9/12/2013	N/A	876	-17	N/A	-77	60	1.5	-5	-78	-74	12	-1	H	
393	21	9/13/2013	N/A	877	-18	N/A	-76	58	1.45	-5	-83	-78	13	-7	H	
394	21	9/14/2013	N/A	878	-18	N/A	-79	61	1.525	-5	-84	-79	13	-5	H	
395	22	9/15/2013	N/A	878	-20	N/A	-77	57	1.425	-5	-84	-79	15	-7	H	

A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q
Sol	Ls	Date	Original Pa	Revised Pa	Max Air Temp °C	Orig. Max Temp °C	Min. Air Temp °C	Air temp Range °C	Range/40	Max ground Temp °C	Orig. Min. Ground Temp	Revised Min Ground Temp	Daytime increase in Temp °C	Night temp decrease Ground to Air °C	UV	Comments
396	22	9/16/2013	N/A	879	-15	N/A	-78	63	1.575	-5	-85	-80	10	-7	H	
397	23	9/18/2013	N/A	880	-15	N/A	-75	60	1.5	-8	-83	-79	7	-8	H	
398	23	9/19/2013	N/A	880	-14	N/A	-79	65	1.625	-7	-84	-79	7	-5	H	
399	24	9/20/2013	N/A	881	-16	N/A	-79	63	1.575	-5	-84	-80	11	-5	H	
400	24	9/21/2013	N/A	881	-16	N/A	-79	63	1.575	-6	-85	-80	10	-6	H	
401	25	9/22/2013	N/A	882	-15	N/A	-79	64	1.6	-6	-85	-80	9	-6	H	
402	25	9/23/2013	N/A	883	-18	N/A	-78	60	1.5	-4	-85	-80	14	-7	H	
403	25	9/24/2013	N/A	883	-18	N/A	-80	62	1.55	-6	-95	-89	12	-15	H	
404	26	9/25/2013	N/A	884	-20	N/A	-78	58	1.45	-7	-91	-85	13	-13	H	
405	26	9/26/2013	N/A	885	-25	N/A	-82	57	1.425	-7	-93	-87	18	-11	H	
406	27	9/27/2013	N/A	886	-15	N/A	-85	70	1.75	0	-91	-86	15	-6	H	
407	27	9/28/2013	N/A	887	-17	N/A	-81	64	1.6	-1	-101	-94	16	-20	H	
408	28	9/29/2013	N/A	887	-16	N/A	-80	64	1.6	0	-102	-95	16	-22	H	
409	28	9/30/2013	N/A	887	-17	N/A	-81	64	1.6	-3	-101	-95	14	-20	H	
410	29	10/1/2013	N/A	888	-14	N/A	-81	67	1.675	-8	-89	-84	6	-8	H	
411	29	10/2/2013	N/A	887	-17	N/A	-82	65	1.625	-9	-86	-81	8	-4	H	
412	30	10/3/2013	N/A	888	-22	N/A	-80	58	1.45	-3	-84	-79	19	-4	H	
413	30	10/4/2013	N/A	888	-22	N/A	-82	60	1.5	-3	-85	-80	19	-3	H	
414	31	10/5/2013	N/A	889	-18	N/A	-79	61	1.525	-5	-93	-87	13	-14	H	
415	31	10/6/2013	N/A	890	-19	N/A	-82	63	1.575	-5	-91	-86	14	-9	H	
416	32	10/7/2013	N/A	889	-18	N/A	-79	61	1.525	-6	-89	-84	12	-10	H	
417	32	10/8/2013	N/A	890	-21	N/A	-82	61	1.525	-3	-93	-87	18	-11	H	
418	33	10/9/2013	N/A	891	-21	N/A	-79	58	1.45	-3	-92	-87	18	-13	H	
419	33	10/10/2013	N/A	891	-24	N/A	-82	58	1.45	-6	-93	-87	18	-11	H	
420	33	10/11/2013	N/A	892	-19	N/A	-80	61	1.525	-7	-91	-86	12	-11	H	

A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q
Sol	Ls	Date	Original Pa	Revised Pa	Max Air Temp °C	Orig. Max Temp °C	Min. Air Temp °C	Air temp Range °C	Range/40	Max ground Temp °C	Orig. Min. Ground Temp	Revised Min Ground Temp	Daytime increase in Temp °C	Night temp decrease Ground to Air °C	UV	Comments
421	34	10/12/2013	N/A	891	-24	N/A	-81	57	1.425	-8	-91	-85	16	-10	H	
422	34	10/13/2013	N/A	891	-20	N/A	-82	62	1.55	-8	-90	-85	12	-8	M	
423	35	10/14/2013	N/A	892	-24	N/A	-81	57	1.425	-12	-86	-81	12	-5	M	
424	35	10/15/2013	N/A	893	-22	N/A	-81	59	1.475	-5	-87	-82	17	-6	M	
425	36	10/16/2013	N/A	893	-21	N/A	-81	60	1.5	-6	-93	-87	15	-12	M	
426	36	10/17/2013	N/A	893	-22	N/A	-79	57	1.425	-6	-95	-89	16	-16	M	
427	37	10/18/2013	N/A	893	-21	N/A	-81	60	1.5	-5	-93	-87	16	-12	M	
428	37	10/19/2013	N/A	894	-23	N/A	-81	58	1.45	-7	-93	-87	16	-12	M	
429	38	10/20/2013	902	895	-21	N/A	-82	61	1.525	-6	-92	-86	15	-10	M	INTERIM WAS 902 Pa
430	38	10/21/2013	N/A	896	-24	N/A	-82	58	1.45	-6	-94	-88	18	-12	M	
431	39	10/22/2013	N/A	895	-24	N/A	-83	59	1.475	-10	-93	-87	14	-10	M	
432	39	10/23/2013	N/A	896	-26	N/A	-82	56	1.4	-9	-88	-88	17	-6	M	
433	40	10/24/2013	N/A	895	-26	N/A	-81	55	1.375	-11	-92	-86	15	-11	M	
434	40	10/25/2013	N/A	896	-25	N/A	-80	55	1.375	-11	-83	-82	14	-3	M	
435	40	10/26/2013	N/A	897	-24	N/A	-81	57	1.425	-9	-83	-82	15	-2	M	
436	41	10/27/2013	N/A	897	-24	N/A	-81	57	1.425	-8	-86	-81	16	-5	M	
437	41	10/28/2013	N/A	898	-27	N/A	-82	55	1.375	-11	-95	-89	16	-13	M	
438	42	10/29/2013	N/A	899	-26	N/A	-79	53	1.325	-15	-89	-84	11	-10	M	
439	42	10/30/2013	N/A	899	-21	N/A	-80	59	1.475	-16	-84	-79	5	-4	M	
440	43	10/31/2013	N/A	899	-25	N/A	-80	55	1.375	-12	-84	-79	13	-4	M	
441	43	11/1/2013	N/A	900	-23	N/A	-81	58	1.45	-11	-84	-79	12	-3	M	
442	44	11/2/2013	N/A	900	-22	N/A	-80	58	1.45	-10	-84	-79	12	-4	M	
443	44	11/3/2013	N/A	901	-24	N/A	-81	57	1.425	-12	-84	-79	12	-3	M	
444	45	11/4/2013	N/A	NO REP.	NO REP.	NO REP.	NO REP.	NO REP.	NO REP.	NO REP.	NO REP.	N/A	NO REP.	NO REP.	N/A	

A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q
Sol	Ls	Date	Original Pa	Revised Pa	Max Air Temp °C	Orig. Max Temp °C	Min. Air Temp °C	Air temp Range °C	Range/40	Max ground Temp °C	Orig. Min. Ground Temp	Revised Min Ground Temp	Daytime increase in Temp °C	Night temp decrease Ground to Air °C	UV	Comments
445	45	11/5/2013	N/A	NO REP.	NO REP.	NO REP.	NO REP.	NO REP.	NO REP.	NO REP.	NO REP.	N/A	NO REP.	NO REP.	N/A	
446	46	11/6/2013	N/A	NO REP.	NO REP.	NO REP.	NO REP.	NO REP.	NO REP.	NO REP.	NO REP.	N/A	NO REP.	NO REP.	N/A	
447	46	11/7/2013	N/A	NO REP.	NO REP.	NO REP.	NO REP.	NO REP.	NO REP.	NO REP.	NO REP.	N/A	NO REP.	NO REP.	N/A	
448	47	11/8/2013	N/A	NO REP.	NO REP.	NO REP.	NO REP.	NO REP.	NO REP.	NO REP.	NO REP.	N/A	NO REP.	NO REP.	N/A	
449	47	11/9/2013	N/A	NO REP.	NO REP.	NO REP.	NO REP.	NO REP.	NO REP.	NO REP.	NO REP.	N/A	NO REP.	NO REP.	N/A	
450	48	11/10/2013	N/A	NO REP.	NO REP.	NO REP.	NO REP.	NO REP.	NO REP.	NO REP.	NO REP.	N/A	NO REP.	NO REP.	N/A	
451	48	11/11/2013	N/A	NO REP.	NO REP.	NO REP.	NO REP.	NO REP.	NO REP.	NO REP.	NO REP.	N/A	NO REP.	NO REP.	N/A	
452	49	11/12/2013	N/A	NO REP.	NO REP.	NO REP.	NO REP.	NO REP.	NO REP.	NO REP.	NO REP.	N/A	NO REP.	NO REP.	N/A	
453	49	11/13/2013	N/A	NO REP.	NO REP.	NO REP.	NO REP.	NO REP.	NO REP.	NO REP.	NO REP.	N/A	NO REP.	NO REP.	N/A	
454	50	11/14/2013	N/A	NO REP.	NO REP.	NO REP.	NO REP.	NO REP.	NO REP.	NO REP.	NO REP.	N/A	NO REP.	NO REP.	N/A	
455	50	11/16/2013	N/A	905	-28	N/A	-84	56	1.4	-12	-84	-82	16	0	M	
456	50	11/17/2013	N/A	905	-26	N/A	-83	57	1.425	-12	-89	-89	14	-6	M	
457	51	11/18/2013	N/A	NO REP.	NO REP.	NO REP.	NO REP.	NO REP.	NO REP.	NO REP.	NO REP.	N/A	NO REP.	NO REP.	N/A	
458	51	11/19/2013	N/A	NO REP.	NO REP.	NO REP.	NO REP.	NO REP.	NO REP.	NO REP.	NO REP.	N/A	NO REP.	NO REP.	N/A	
459	52	11/20/2013	N/A	NO REP.	NO REP.	NO REP.	NO REP.	NO REP.	NO REP.	NO REP.	NO REP.	N/A	NO REP.	NO REP.	N/A	
460	52	11/21/2013	N/A	NO REP.	NO REP.	NO REP.	NO REP.	NO REP.	NO REP.	NO REP.	NO REP.	N/A	NO REP.	NO REP.	N/A	
461	53	11/22/2013	N/A	NO REP.	NO REP.	NO REP.	NO REP.	NO REP.	NO REP.	NO REP.	NO REP.	N/A	NO REP.	NO REP.	N/A	
462	53	11/23/2013	887	N/A	-28	N/A	-74	46	1.15	-12	-78	N/A	16	-4	N/A	INTERIM WAS 887 Pa
463	53	11/24/2013	N/A	906	-26	N/A	-86	60	1.5	-13	-88	-88	13	-2	M	
464	54	11/25/2013	N/A	906	-26	N/A	-84	58	1.45	-13	-87	-87	13	-3	M	
465	54	11/26/2013	N/A	906	-23	N/A	-85	62	1.55	-13	-85	-85	10	0	M	
466	55	11/27/2013	N/A	907	-26	N/A	-85	59	1.475	-12	-84	-84	14	1	M	
467	55	11/28/2013	N/A	907	-28	N/A	-84	56	1.4	-11	-85	-85	17	-1	M	

A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q
Sol	Ls	Date	Original Pa	Revised Pa	Max Air Temp °C	Orig. Max Temp °C	Min. Air Temp °C	Air temp Range °C	Range/40	Max ground Temp °C	Orig. Min. Ground Temp	Revised Min Ground Temp	Daytime increase in Temp °C	Night temp decrease Ground to Air °C	UV	Comments
468	55	11/29/2013	N/A	907	-29	N/A	-85	56	1.4	-14	-86	-86	15	-1	M	
469	56	11/30/2013	N/A	908	-29	N/A	-85	56	1.4	-12	-86	-86	17	-1	M	
470	56	12/1/2013	N/A	907	NO REP. revised to -26	NO REP.	NO REP. revised to -85	NO REP. revised to -59	NO REP. revised to 1.475	NO REP. revised to -9	NO REP.	-86	NO REP. revised to 17	NO REP. revised to -1	M	
471	57	12/2/2013	N/A	NO REP.	NO REP.	NO REP.	NO REP.	NO REP.	NO REP.	NO REP.	NO REP.	-87	NO REP.	NO REP.	M	
472	57	12/4/2013	N/A	907	-31	N/A	-84	53	1.325	-10	-86	-86	21	-2	M	
473	58	12/5/2013	N/A	907	-29	N/A	-86	57	1.425	-8	-90	-90	21	-4	M	
474	58	12/6/2013	N/A	906	-26	N/A	-84	58	1.45	-9	-95	-95	17	-11	M	
475	59	12/7/2013	N/A	906	-28	N/A	-85	57	1.425	-9	-93	-93	19	-8	M	
476	59	12/8/2013	N/A	906	-25	N/A	-85	60	1.5	-7	-90	-90	18	-5	M	
477	60	12/9/2013	N/A	907	-26	N/A	-85	59	1.475	-9	-93	-93	17	-8	M	
478	60	12/10/2013	N/A	NO REP.	NO REP.	NO REP.	NO REP.	NO REP.	NO REP.	NO REP.	NO REP.	N/A	NO REP.	NO REP.	N/A	
479	61	12/11/2013	N/A	NO REP.	NO REP.	NO REP.	NO REP.	NO REP.	NO REP.	NO REP.	NO REP.	N/A	NO REP.	NO REP.	N/A	
480	61	12/12/2013	N/A	NO REP.	NO REP.	NO REP.	NO REP.	NO REP.	NO REP.	NO REP.	NO REP.	N/A	NO REP.	NO REP.	N/A	
481	62	12/13/2013	N/A	NO REP.	NO REP.	NO REP.	NO REP.	NO REP.	NO REP.	NO REP.	NO REP.	N/A	NO REP.	NO REP.	N/A	
482	62	12/14/2013	N/A	NO REP.	NO REP.	NO REP.	NO REP.	NO REP.	NO REP.	NO REP.	NO REP.	N/A	NO REP.	NO REP.	N/A	
483	63	12/15/2013	N/A	NO REP.	NO REP.	NO REP.	NO REP.	NO REP.	NO REP.	NO REP.	NO REP.	N/A	NO REP.	NO REP.	N/A	
484	63	12/16/2013	N/A	NO REP.	NO REP.	NO REP.	NO REP.	NO REP.	NO REP.	NO REP.	NO REP.	N/A	NO REP.	NO REP.	N/A	
485	63	12/17/2013	N/A	NO REP.	NO REP.	NO REP.	NO REP.	NO REP.	NO REP.	NO REP.	NO REP.	N/A	NO REP.	NO REP.	N/A	
486	64	12/18/2013	N/A	904	-31	N/A	-110 revised to -84	79 revised to -53	1.975 revised to 1.325	-12	-91	-91	19	19	M	air low changed from -110 to -84
487	64	12/19/2013	N/A	904	NO REP. revised to -30	NO REP.	NO REP. revised to -85	NO REP. revised to 55	NO REP. revised to 1.375	NO REP. revised to -8	NO REP. revised to -91	-91	NO REP. revised to 22	NO REP. revised to -6	M	

A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q
Sol	Ls	Date	Original Pa	Revised Pa	Max Air Temp °C	Orig. Max Temp °C	Min. Air Temp °C	Air temp Range °C	Range/40	Max ground Temp °C	Orig. Min. Ground Temp	Revised Min Ground Temp	Daytime increase in Temp °C	Night temp decrease Ground to Air °C	UV	Comments
488	64	12/20/2013	N/A	903	NO REP. revised to -23	NO REP.	NO REP. revised to -87	NO REP. revised to 64	NO REP. revised to 1.6	NO REP. revised to -11	NO REP. revised to -89	-89	NO REP. revised to 12	NO REP. revised to -2	M	
489	65	12/21/2013	N/A	904	-29	N/A	-103	74	1.85	-11	-88	-88	18	15	M	
490	65	12/22/2013	N/A	904	-31	N/A	-87	56	1.4	-12	-88	-88	19	-1	M	
491	66	12/23/2013	N/A	903	-30	N/A	-86	56	1.4	-13	-87	-87	17	-1	M	
492	66	12/24/2013	N/A	903	-30	N/A	-86	56	1.4	-13	-92	-92	17	-6	M	
493	67	12/25/2013	N/A	902	-32	N/A	-84	52	1.3	-14	-89	-89	18	-5	M	
494	67	12/26/2013	N/A	902	-24	N/A	-85	61	1.525	-9	-87	-87	15	-2	M	
495	68	12/27/2013	N/A	900	-26	N/A	-86	60	1.5	-10	-88	-88	16	-2	M	
496	68	12/28/2013	N/A	901	-26	N/A	-85	59	1.475	-10	-88	-88	16	-3	M	
497	69	12/29/2013	N/A	901	-30	N/A	-86	56	1.4	-9	-87	-87	21	-1	M	
498	69	12/30/2013	N/A	901	-28	N/A	-86	58	1.45	-10	-90	-90	18	-4	M	
499	69	12/31/2013	N/A	899	-30	N/A	-84	54	1.35	-9	-90	-90	21	-6	M	
500	70	1/1/2014	N/A	897	-23	N/A	-85	62	1.55	-11	-88	-88	12	-3	M	
501	70	1/2/2014	N/A	898	-28	N/A	-125 revised to -83	97 revised to 55	2.425 revised to 1.375	-10	-88	-88	18	37 revised to -5	M	low changed to -83
502	71	1/3/2014	N/A	898	-30	N/A	-87	57	1.425	-8	-88	-88	22	-1	M	
503	71	1/4/2014	N/A	897	NO REP. revised to -28	NO REP.	NO REP. revised to -86	NO REP. revised to 58	NO REP. revised to 1.45	NO REP. revised to -10	NO REP. revised to -87	-87	NO REP. revised to 18	NO REP. revised to -1	N/A	
504	72	1/5/2014	N/A	895	-29	N/A	-85	56	1.4	-9	-90	-90	20	-5	N/A	
505	72	1/6/2014	N/A	895	-29	N/A	-85	56	1.4	-8	-91	-91	21	-6	M	
506	73	1/8/2014	N/A	894	-27	N/A	-86	59	1.475	-9	-90	-90	18	-4	M	
507	73	1/9/2014	N/A	894	-25	N/A	-85	60	1.5	-10	-90	-90	15	-5	M	
508	73	1/10/2014	N/A	893	-29	N/A	-83	54	1.35	-11	-91	-91	18	-8	M	

A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q
Sol	Ls	Date	Original Pa	Revised Pa	Max Air Temp °C	Orig. Max Temp °C	Min. Air Temp °C	Air temp Range °C	Range/40	Max ground Temp °C	Orig. Min. Ground Temp	Revised Min Ground Temp	Daytime increase in Temp °C	Night temp decrease Ground to Air °C	UV	Comments
509	73	1/11/2014	N/A	895	-30	N/A	-86	56	1.4	-13	-88	-88	17	-2	M	
510	74	1/12/2014	N/A	892	-31	N/A	-85	54	1.35	-13	-92	-92	18	-7	M	
511	75	1/13/2014	N/A	892	-31	N/A	-85	54	1.35	-10	-93	-93	21	-8	M	
512	75	1/14/2014	N/A	890	-24	N/A	-86	62	1.55	-9	-94	-94	15	-8	M	
513	76	1/15/2014	N/A	889	-29	N/A	-114 revised to -86	85 revised to 57	2.125 revised to 1.425	-10	-91	-91	19	23 revised to -86	M	low changed to -86
514	76	1/16/2014	N/A	888	-28	N/A	-91 revised to -86	63	1.575	-10	-91	-91	18	0 revised to -5	M	low changed to -86
515	77	1/17/2014	N/A	888	-23	N/A	-86	63	1.575	-6	-89	-89	17	-3	M	
516	77	1/18/2014	N/A	888	-25	N/A	-86	61	1.525	-6	-99	-99	19	-13	M	
517	77	1/19/2014	N/A	885	-27	N/A	-86	59	1.475	-6	-98	-98	21	-12	M	
518	78	1/20/2014	N/A	885	-29	N/A	-85	56	1.4	-9	-100	-100	20	-15	M	
519	78	1/21/2014	N/A	884	-25	N/A	-86	61	1.525	-11	-86	-86	14	0	M	
520	79	1/22/2014	N/A	884	-24	N/A	-86	62	1.55	-9	-91	-91	15	-5	M	
521	79	1/23/2014	N/A	882	-26	N/A	-87	61	1.525	-7	-95	-95	19	-8	M	
522	80	1/24/2014	N/A	881	-26	N/A	-85	59	1.475	-7	-98	-98	19	-13	M	
523	80	1/25/2014	N/A	881	-25	N/A	-85	60	1.5	-7	-98	-98	18	-13	M	
524	81	1/26/2014	N/A	880	-27	N/A	-85	58	1.45	-7	-96	-96	20	-11	M	
525	81	1/27/2014	N/A	878	-29	N/A	-87	58	1.45	-11	-91	-91	18	-4	M	
526	82	1/28/2014	N/A	878	-24	N/A	-87	63	1.575	-10	-90	-90	14	-3	M	
527	82	1/29/2014	N/A	877	-23	N/A	-86	63	1.575	-7	-94	-94	16	-8	M	
528	82	1/30/2014	N/A	876	-26	N/A	-86	60	1.5	-9	-93	-93	17	-7	M	
529	83	1/31/2014	N/A	875	-23	N/A	-87	64	1.6	-11	-100	-100	12	-13	M	
530	83	2/1/2014	N/A	873	-28	N/A	-87	59	1.475	-11	-99	-99	17	-12	M	
531	84	2/2/2014	N/A	872	-22	N/A	-87	65	1.625	-12	-99	-99	10	-12	M	

A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q
Sol	Ls	Date	Original Pa	Revised Pa	Max Air Temp °C	Orig. Max Temp °C	Min. Air Temp °C	Air temp Range °C	Range/40	Max ground Temp °C	Orig. Min. Ground Temp	Revised Min Ground Temp	Daytime increase in Temp °C	Night temp decrease Ground to Air °C	UV	Comments
532	84	2/3/2014	N/A	872	-23	N/A	-88	65	1.625	-10	-97	-97	13	-9	M	
533	85	2/4/2014	N/A	871	-30	N/A	-87	57	1.425	-7	-98	-98	23	-11	M	
534	85	2/5/2014	N/A	869	-29	N/A	-86	57	1.425	-6	-101	-101	23	-15	M	
535	86	2/6/2014	N/A	868	-29	N/A	-88	59	1.475	-7	-99	-99	22	-11	M	
536	86	2/7/2014	N/A	867	-29	N/A	-83	54	1.35	-12	-94	-94	17	-11	M	
537	86	2/8/2014	N/A	865	-28	N/A	-127	99	2.475	-11	-92	-92	17	35	M	
538	87	2/9/2014	N/A	865	-25	N/A	-85	60	1.5	-8	-91	-91	17	-6	M	
539	87	2/10/2014	N/A	864	-23	N/A	-85	62	1.55	-17	-82	-82	6	3	M	
540	88	2/11/2014	N/A	862	-29	N/A	-84	55	1.375	-18	-85	-85	11	-1	M	
541	88	2/12/2014	N/A	861	-27	N/A	-84	57	1.425	-11	-93	-93	16	-9	M	
542	89	2/13/2014	N/A	867	-29	N/A	-85	56	1.4	-11	-91	-91	18	-6	M	
543	89	2/15/2014	N/A	858	-26	N/A	-84	58	1.45	-16	-86	-86	10	-2	M	
544	90 WINTER	2/16/2014	N/A	857	-27	N/A	-86	59	1.475	-16	-84	-84	11	2	M	
545	90 WINTER	2/17/2014	N/A	856	-29	N/A	-85	56	1.4	-14	-87	-87	15	-2	M	
546	91	2/18/2014	N/A	855	-34	N/A	-85	51	1.275	-13	-91	-91	21	-6	M	
547	91	2/19/2014	N/A	853	-29	N/A	-85	56	1.4	-10	-89	-89	19	-4	M	
548	91	2/20/2014	N/A	852	-28	N/A	-86	58	1.45	-10	-87	-87	18	-1	M	
549	92	2/21/2014	N/A	851	-23	N/A	-87	64	1.6	-12	-89	-89	11	-2	M	
550	92	2/22/2014	N/A	850	-27	N/A	-85	58	1.45	-9	-88	-88	18	-3	M	
551	93	2/23/2014	N/A	848	-28	N/A	-85	57	1.425	-11	-92	-92	17	-7	M	
552	93	2/24/2014	N/A	847	-29	N/A	-86	57	1.425	-11	-91	-91	18	-5	M	
553	94	2/25/2014	N/A	845	-26	N/A	-84	58	1.45	-10	-90	-90	16	-6	M	
554	94	2/26/2014	N/A	843	-22	N/A	-84	62	1.55	-7	-96	-96	15	-12	M	

A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q
Sol	Ls	Date	Original Pa	Revised Pa	Max Air Temp °C	Orig. Max Temp °C	Min. Air Temp °C	Air temp Range °C	Range/40	Max ground Temp °C	Orig. Min. Ground Temp	Revised Min Ground Temp	Daytime increase in Temp °C	Night temp decrease Ground to Air °C	UV	Comments
555	95	2/27/2014	N/A	843	-31	N/A	-85	54	1.35	-9	-95	-95	22	-10	M	
556	95	2/28/2014	N/A	842	-29	N/A	-85	56	1.4	-7	-93	-93	22	-8	M	
557	96	3/1/2014	N/A	840	-29	N/A	-85	56	1.4	-6	-92	-92	23	-7	M	
558	96	3/2/2014	N/A	839	-26	N/A	-85	59	1.475	-6	-93	-93	20	-8	M	
559	96	3/3/2014	N/A	838	-27	N/A	-85	58	1.45	-3	-93	-93	24	-8	M	
560	97	3/4/2014	N/A	836	-23	N/A	-86	63	1.575	-6	-97	-97	17	-11	M	
561	97	3/5/2014	N/A	835	-23	N/A	-85	62	1.55	-5	-89	-89	18	-4	M	
562	98	3/6/2014	N/A	834	-23	N/A	-85	62	1.55	-11	-92	-92	12	-7	M	
563	98	3/7/2014	N/A	833	-31	N/A	-87	56	1.4	-9	-88	-88	22	-1	M	
564	99	3/8/2014	N/A	831	-27	N/A	-86	59	1.475	-11	-92	-92	16	-6	M	
565	99	3/9/2014	N/A	830	-27	N/A	-85	58	1.45	-8	-91	-91	19	-6	M	
566	100	3/10/2014	N/A	829	-27	N/A	-86	59	1.475	-13	-86	-86	14	0	M	
567	100	3/11/2014	N/A	827	-28	N/A	-86	58	1.45	-13	-87	-87	15	-1	M	
568	101	3/12/2014	N/A	825	-28	N/A	-86	58	1.45	-9	-86	-86	19	0	M	
569	101	3/13/2014	N/A	825	-27	N/A	-85	58	1.45	-7	-90	-90	20	-5	M	
570	102	3/14/2014	N/A	823	-26	N/A	-84	58	1.45	-7	-91	-91	19	-7	M	
571	102	3/15/2014	N/A	821	-26	N/A	-84	58	1.45	-8	-92	-92	18	-8	M	
572	102	3/16/2014	N/A	820	-27	N/A	-85	58	1.45	-8	-89	-89	19	-4	M	
573	102	3/17/2014	N/A	819	-27	N/A	-84	57	1.425	-10	-87	-87	17	-3	M	
574	103	3/18/2014	N/A	817	-23	N/A	-85	62	1.55	-9	-87	-87	14	-2	M	
575	104	3/19/2014	N/A	816	-26	N/A	-82	56	1.4	-10	-88	-88	16	-6	M	
576	104	3/20/2014	N/A	815	-26	N/A	-84	58	1.45	-8	-90	90	18	-6	M	
577	105	3/21/2014	N/A	813	-27	N/A	-84	57	1.425	-11	-90	-90	16	-6	M	
578	105	3/22/2014	N/A	812	-23	N/A	-83	60	1.5	-9	-87	-87	14	-4	M	
579	106	3/24/2014	N/A	811	-22	N/A	-82	60	1.5	-8	-88	-88	14	-6	M	

A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q
Sol	Ls	Date	Original Pa	Revised Pa	Max Air Temp °C	Orig. Max Temp °C	Min. Air Temp °C	Air temp Range °C	Range/40	Max ground Temp °C	Orig. Min. Ground Temp	Revised Min Ground Temp	Daytime increase in Temp °C	Night temp decrease Ground to Air °C	UV	Comments
580	106	3/25/2014	N/A	810	-24	N/A	-83	59	1.475	-10	-87	-87	14	-4	M	
581	107	3/26/2014	N/A	808	-28	N/A	-84	56	1.4	-9	-88	-88	19	-4	M	
582	107	3/27/2014	N/A	807	-27	N/A	-84	57	1.425	-9	-91	-91	18	-7	M	
583	108	3/28/2014	N/A	806	-27	N/A	-82	55	1.375	-10	-91	-91	17	-9	M	
584	108	3/29/2014	N/A	804	-25	N/A	-82	57	1.425	-8	-89	-89	17	-7	M	
585	109	3/30/2014	N/A	802	-26	N/A	-83	57	1.425	-9	-88	88	17	-5	M	
586	109	3/31/2014	N/A	802	-24	N/A	-82	58	1.45	-8	-88	-88	16	-6	M	
587	109	4/1/2014	N/A	801	-28	N/A	-85	57	1.425	-9	-86	-86	19	-1	M	
588	110	4/2/2014	N/A	799	-24	N/A	-84	60	1.5	-8	-88	-88	16	-4	M	
589	110	4/3/2014	N/A	798	-27	N/A	-85	58	1.45	-10	-94	-94	17	-9	M	
590	111	4/4/2014	N/A	797	-26	N/A	-82	56	1.4	-11	-85	-85	15	-3	M	
591	111	4/5/2014	N/A	795	-26	N/A	-82	56	1.4	-11	-84	-84	15	-2	M	
592	112	4/6/2014	N/A	795	-26	N/A	-83	57	1.425	-11	-85	-85	15	-2	M	
593	112	4/7/2014	N/A	795	-23	N/A	-83	60	1.5	-11	-87	-87	12	-4	M	
594	113	4/8/2014	N/A	793	-22	N/A	-83	61	1.525	-15	-86	-86	7	-3	M	
595	113	4/9/2014	N/A	792	-25	N/A	-83	58	1.45	-12	-86	-86	13	-3	M	
596	114	4/10/2014	N/A	791	-24	N/A	-82	58	1.45	-10	-84	-84	14	-2	M	
597	114	4/11/2014	N/A	790	-26	N/A	-84	58	1.45	-11	-83	-83	15	1	M	
598	115	4/12/2014	N/A	787	-25	N/A	-84	59	1.475	-10	-82	-82	15	2	M	
599	115	4/13/2014	N/A	788	-20	N/A	-84	64	1.6	-9	-82	-82	11	2	M	
600	116	4/14/2014	N/A	787	-25	N/A	-81	56	1.4	-14	-81	-81	11	0	M	
601	116	4/15/2014	N/A	785	-25	N/A	-82	57	1.425	-8	-74	-74	17	8	M	
602	117	4/16/2014	N/A	784	-22	N/A	-82	60	1.5	-11	-82	-82	11	0	M	
603	117	4/17/2014	N/A	783	-15	N/A	-83	68	1.7	-9	-82	-82	6	1	H	
604	118	4/18/2014	N/A	782	-17	N/A	-84	67	1.675	-9	-87	-87	8	-3	M	

A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q
Sol	Ls	Date	Original Pa	Revised Pa	Max Air Temp °C	Orig. Max Temp °C	Min. Air Temp °C	Air temp Range °C	Range/40	Max ground Temp °C	Orig. Min. Ground Temp	Revised Min Ground Temp	Daytime increase in Temp °C	Night temp decrease Ground to Air °C	UV	Comments
605	118	4/19/2014	N/A	781	-22	N/A	-83	61	1.525	-9	-86	-86	13	-3	M	
606	118	4/20/2014	N/A	780	-27	N/A	-84	57	1.425	-8	-88	-88	19	-4	M	
607	119	4/21/2014	N/A	779	-28	N/A	-83	55	1.375	-5	-96	-96	23	-13	M	
608	119	4/22/2014	N/A	777	-21	N/A	-85	64	1.6	-4	-97	-97	17	-12	L	
609	120	4/23/2014	N/A	777	-20	N/A	-84	64	1.6	-5	-93	-93	15	-9	M	
610	120	4/24/2014	N/A	776	-20	N/A	-85	65	1.625	-5	-94	-94	15	-9	M	
611	121	4/25/2014	N/A	775	-23	N/A	-84	61	1.525	-5	-93	-93	18	-9	M	
612	121	4/26/2014	N/A	774	-27	N/A	-85	58	1.45	-4	-95	-95	23	-10	M	
613	122	4/27/2014	N/A	773	-21	N/A	-84	63	1.575	-4	-98	-98	17	-14	M	
614	122	4/28/2014	N/A	772	-19	N/A	-82	63	1.575	-5	-95	-95	14	-13	M	
615	123	4/29/2014	N/A	771	-23	N/A	-83	60	1.5	-4	-93	-93	19	-10	M	
616	123	5/1/2014	N/A	769	-19	N/A	-82	63	1.575	-4	-93	-93	15	-11	M	
617	124	5/2/2014	N/A	769	-19	N/A	-84	65	1.625	-4	-94	-94	15	-10	M	
618	124	5/3/2014	N/A	769	-23	N/A	-83	60	1.5	-3	-94	-94	20	-11	M	
619	125	5/4/2014	N/A	766	-22	N/A	-82	60	1.5	-3	-96	-96	19	-14	L	
620	125	5/5/2014	N/A	765	-19	N/A	-83	64	1.6	-4	-96	-96	15	-13	M	
621	126	5/6/2014	N/A	765	-21	N/A	-82	61	1.525	-3	-93	-93	18	-11	M	
622	126	5/7/2014	N/A	763	-19	N/A	-84	65	1.625	-3	-92	-92	16	-8	M	
623	127	5/8/2014	N/A	763	-21	N/A	-83	62	1.55	-2	-92	-92	19	-9	M	
624	127	5/9/2014	N/A	762	-19	N/A	-82	63	1.575	-2	-92	-92	17	-10	M	
625	128	5/10/2014	N/A	761	-24	N/A	-81	57	1.425	-4	-95	-95	20	-14	M	
626	128	5/11/2014	N/A	760	-21	N/A	-82	61	1.525	-3	-94	-94	18	-12	M	
627	129	5/12/2014	N/A	759	-19	N/A	-82	63	1.575	-3	-93	-93	16	-11	M	
628	129	5/13/2014	N/A	759	-23	N/A	-81	58	1.45	-2	-90	-90	21	-9	M	
629	130	5/14/2014	N/A	759	-24	N/A	-84	-60	1.5	-3	-94	-94	21	-10	M	

A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q
Sol	Ls	Date	Original Pa	Revised Pa	Max Air Temp °C	Orig. Max Temp °C	Min. Air Temp °C	Air temp Range °C	Range/40	Max ground Temp °C	Orig. Min. Ground Temp	Revised Min Ground Temp	Daytime increase in Temp °C	Night temp decrease Ground to Air °C	UV	Comments
630	130	5/15/2014	N/A	757	-20	N/A	-82	-62	1.55	-2	-93	-93	18	-11	H	
631	131	5/16/2014	N/A	756	-18	N/A	-81	-63	1.575	-1	-88	-88	17	-7	H	
632	131	5/17/2014	N/A	755	-18	N/A	-79	-61	1.525	-4	-86	-86	14	-7	H	
633	132	5/18/2014	N/A	754	-15	N/A	-81	-66	1.65	-3	-85	-85	12	-4	H	
634	132	5/19/2014	N/A	753	-20	N/A	-82	-62	1.55	4	-85	-85	24	-3	H	
635	133	5/20/2014	N/A	754	-10	N/A	-82	-72	1.8	-3	-81	-81	7	1	H	
636	133	5/21/2014	N/A	752	-19	N/A	-81	-62	1.55	0	-89	-89	19	-8	H	
637	134	5/22/2014	N/A	752	-18	N/A	-80	-62	1.55	-5	-85	-85	13	-5	M	
638	134	5/23/2014	N/A	751	-12	N/A	-80	-68	1.7	-9	-82	-82	3	-2	M	
639	135	5/24/2014	N/A	750	-16	N/A	-80	-64	1.6	-9	-80	-80	2	0	M	
640	135	5/25/2014	N/A	750	-11	N/A	-81	-70	1.75	-7	-81	-81	4	0	M	
641	136	5/26/2014	N/A	749	-19	N/A	-81	-62	1.55	-2	-81	-81	17	0	H	
642	136	5/27/2014	N/A	749	-19	N/A	-80	-61	1.525	-2	-85	-85	17	-5	H	
643	137	5/28/2014	N/A	748	-14	N/A	-80	-66	1.65	-2	-88	-88	12	-8	H	
644	137	5/29/2014	N/A	748	-19	N/A	-80	-61	1.525	0	-84	-84	19	-4	H	
645	138	5/30/2014	N/A	746	-8	N/A	-81	-73	1.825	0	-86	-86	8	-5	H	
646	138	5/31/2014	N/A	746	-16	N/A	-81	-65	1.625	0	-87	-87	16	-6	H	
647	139	6/1/2014	N/A	746	-19	N/A	-79	-60	1.5	-2	-85	-85	17	-6	H	
648	139	6/2/2014	N/A	746	-20	N/A	-80	-60	1.5	-2	-85	-85	18	-5	H	Pressure over 1 mb lower than Ls 90
649	140	6/3/2014	N/A	745	-14	N/A	-79	-65	1.625	-3	-85	-85	11	-6	H	
650	140	6/4/2014	N/A	743	-11	N/A	-80	-69	1.725	0	-85	-85	11	-5	H	
651	141	6/5/2014	N/A	743	-8	N/A	-80	-72	1.8	2	-84	-84	10	-4	H	
652	141	6/7/2014	N/A	745	-12	N/A	-79	-67	1.675	-3	-79	-79	9	0	H	

A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q
Sol	Ls	Date	Original Pa	Revised Pa	Max Air Temp °C	Orig. Max Temp °C	Min. Air Temp °C	Air temp Range °C	Range/40	Max ground Temp °C	Orig. Min. Ground Temp	Revised Min Ground Temp	Daytime increase in Temp °C	Night temp decrease Ground to Air °C	UV	Comments
653	142	6/8/2014	N/A	744	-13	N/A	-80	-67	1.675	-4	-80	-80	9	0	H	
654	142	6/9/2014	N/A	742	-8	N/A	-79	-71	1.775	-4	-79	-79	4	0	H	
655	143	6/10/2014	N/A	741	-14	N/A	-77	-63	1.575	0	-81	-81	14	-4	H	
656	143	6/11/2014	N/A	740	-13	N/A	-80	-67	1.675	-3	-83	-83	10	-3	M	
657	144	6/12/2014	N/A	739	-6	N/A	-79	-73	1.825	1	-79	-79	7	0	H	
658	144	6/13/2014	N/A	739	-10	N/A	-79	-69	1.725	1	-87	-87	11	-8	M	
659	145	6/14/2014	N/A	738	-14	N/A	-77	-63	1.575	1	-83	-83	15	-6	M	
660	145	6/15/2014	N/A	735	-12	N/A	-78	-66	1.65	1	-84	-84	13	-6	M	
661	146	6/16/2014	N/A	735	-10	N/A	-76	-66	1.65	1	-85	-85	11	-9	H	
662	146	6/17/2014	N/A	735	-11	N/A	-77	-66	1.65	4	-78	-78	15	-1	H	
663	147	6/18/2014	N/A	734	-10	N/A	-77	-67	1.675	4	-83	-83	14	-6	H	
664	147	6/19/2014	N/A	732	-8	N/A	-78	-70	1.75	0	-81	-81	8	-3	H	Minimum pressure same as Ls 157
665	148	6/20/2014	N/A	742	-16	N/A	-78	-62	1.55	7	-82	-82	23	-4	H	
666	148	6/21/2014	N/A	736	-7	N/A	-77	-70	1.75	0	-80	-80	7	-3	H	
667	149	6/22/2014	N/A	736	-7	N/A	-76	-69	1.725	0	-81	-81	7	-5	H	
668	150	6/23/2014	N/A	734	-4	N/A	-75	-71	1.775	7	-78	-78	11	-3	H	
669	150	6/24/2014	N/A	735	-4	N/A	-84	-80	2	8	-91	-91	21	-7	H	

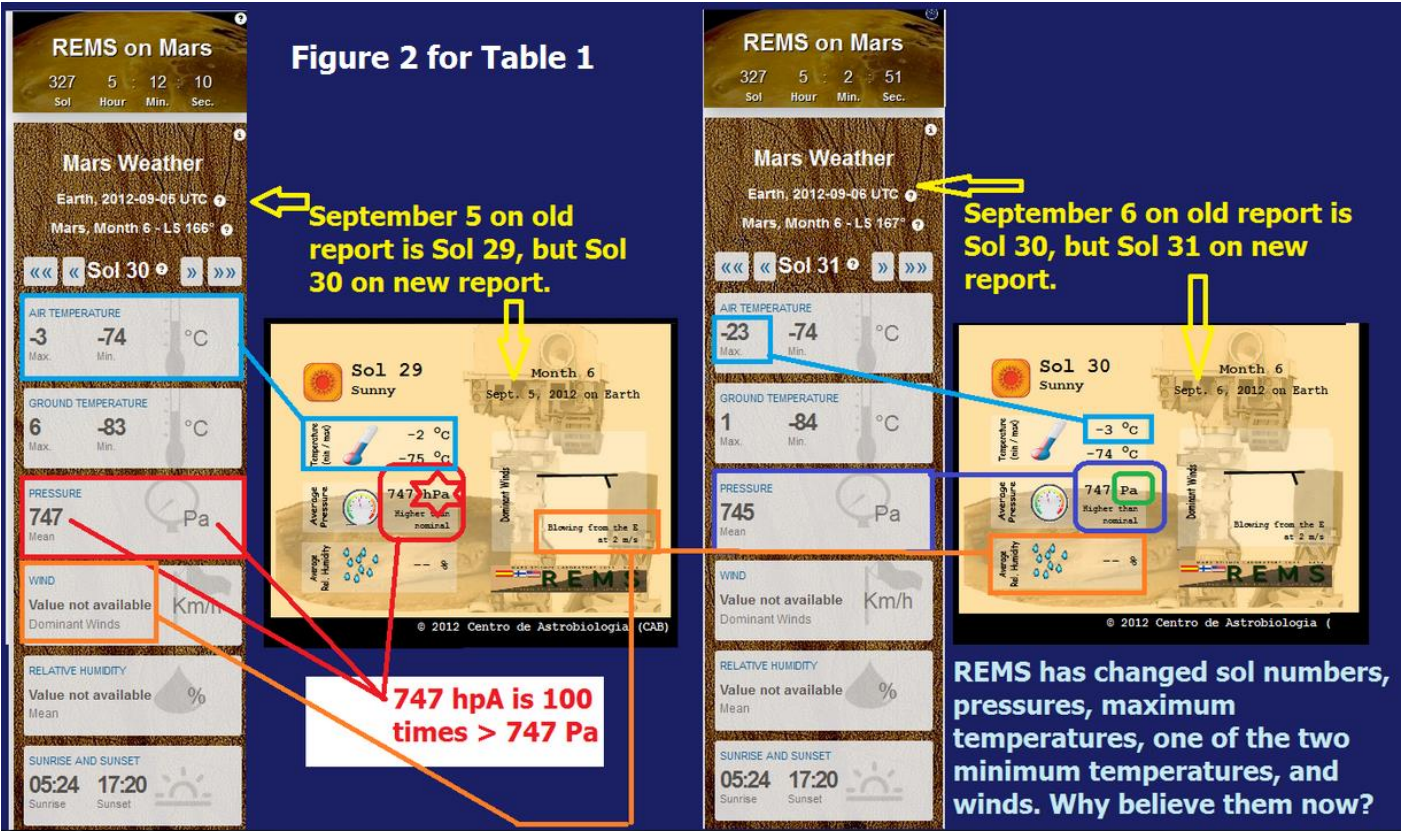


Figure 2: The REMS Team/JPL put out reports for September 5, 2012 that showed pressure on Mars as both 747 hPa and 747 Pa. Similar errors were made back to at least September 1, 2012 (with a pressure also found published for August 30, 2012 that was 735 hPa). While the lower pressures match what NASA claims about Mars, only the higher pressures match the weather plainly seen on Mars.

Air temperature was recorded at both booms with a PT1000-type sensor placed on a small rod long enough to be outside the mast and boom thermal boundary layers. Its measurement range is 150 to 300 K. It has an accuracy of 5 K and a resolution of 0.1 K. If the air temperature sensor has an accuracy of 5 K (5° C), then how does the REMS Team justify changing so many temperatures by that much or more? For example, Table 2 and Figure 3 show all the times that they dropped the air temperature initially reported by 10 K or more.

Figure 2: The REMS Team/JPL put out reports for September 5, 2012 that showed pressure on Mars as both 747 hPa and 747 Pa. Similar errors were made back to at least September 1, 2012 (with a pressure also found published for August 30, 2012 that was 735 hPa). While the lower pressures match what NASA claims about Mars, only the higher pressures match the weather plainly seen on Mars.

Table 2 Air Temperature Revisions where JPL dropped the temperature by 10 K or more.

A	B	C	D
SOL	ORIGINAL MAX AIR TEMP °C	NEW MAX AIR TEMP °C	CHANGE °C (EQUALS CHANGE K)
		TEMP ≥ 0°C REDUCED TO TEMP ≤ 0°C	
23	0	-16	16
26	2	-14	16
27	-1	-15	14
31	-3	-23	20
38	-3	-13	10
40	2	-12	14
41	2	-12	14
42	5	-7	12
43	3	-12	15
44	4	-10	14
45	3	-9	12
46	4	-12	16
47	6	-9	15
49	4	-10	14
50	0	-10	10
51	3	-7	10
52	7	-7	14
53	5	-5	10
54	5	-9	14
102	8	-3	11
112	5	-8	13
116	5	-6	11
118	4.53	-6	10.53
123	2.1	-10	12.1
124	5.4	-5	10.4
179	5	-7	12

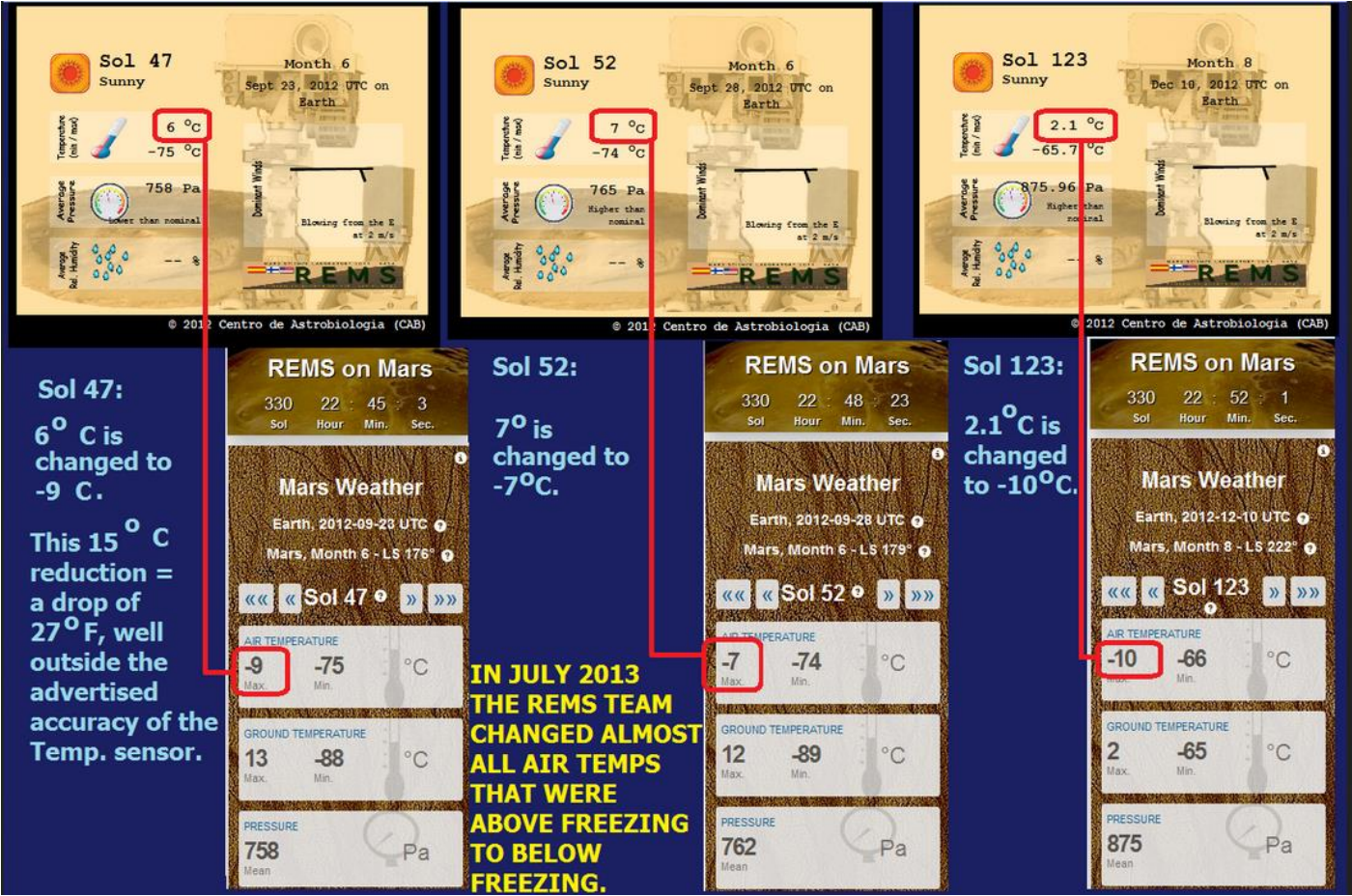


Figure 3: The REMS Team here appears to purposely sabotage all of its remaining credibility by going back and dropping very nearly all of its above freezing air temperatures to below freezing. QUESTION WITH NO ANSWER YET: WHO IS ORDERING THESE CHANGES?

MARS WEATHER DATA WAS MISREPORTED AFTER MSL'S BOOM ONE BROKE ON LANDING. Although MSL Curiosity Weather Boom 1 broke on landing, and although it has the ground temperature sensor as is shown on Figure 4, the REMS Team in late June, 2013 somehow managed to publish ground (as well as air) temperatures for almost all sols back to the landing. These temperatures, and further revisions of them in the case of minimum ground temperatures, are shown in Columns K, L and M of Table 1. Before June, 2014 REMS reports only included air temperatures. These temperatures are of interest to the pressure issue because the density of the Martian air will affect how fast cooling or heating will occur between the ground and the air at the level of the weather boom.

In regard to the sudden appearance of ground temperatures after almost a year of no such data and a damaged Boom 1, Guy Webster, JPL's public relations director wrote us on July 23, 2013, stating that "The damage on landing did not include the infrared sensor that provides ground-temp information. Ground temps through about Sol 200 were charted in April on the bottom half of <http://photojournal.jpl.nasa.gov/catalog/PIA16913>." However he failed to address the issue of why all the temperatures were suddenly dropped by great amounts. Partially answered questions do not, in our book, indicate a credible response. We asked him several times about the temperature reduction, and each time the question was ignored. On March 27, 2014 showed that REMS had eliminated all temperatures (indeed, all weather data) of the first 9 sols of MSL, and that they continue to change pressure and temperatures published throughout the first 669 Sols of data shown on Table 1 and well into Year 2. **In short, they present a constantly moving unreliable target.** Marscorrect.com and segments of Davidaroffman.com managed by Barry Roffman continue to document this charge, using printscreen shots of data that JPL first presented, and data published by them after we either contacted them directly or posted color coded data like that in Table 1 above, for [MSL Year 2 up through Sol 866](#) (the end of spring), for [MSL Year 2 summer](#) (up through Sol 1,020), and on to [MSL Year 2 Autumn](#).

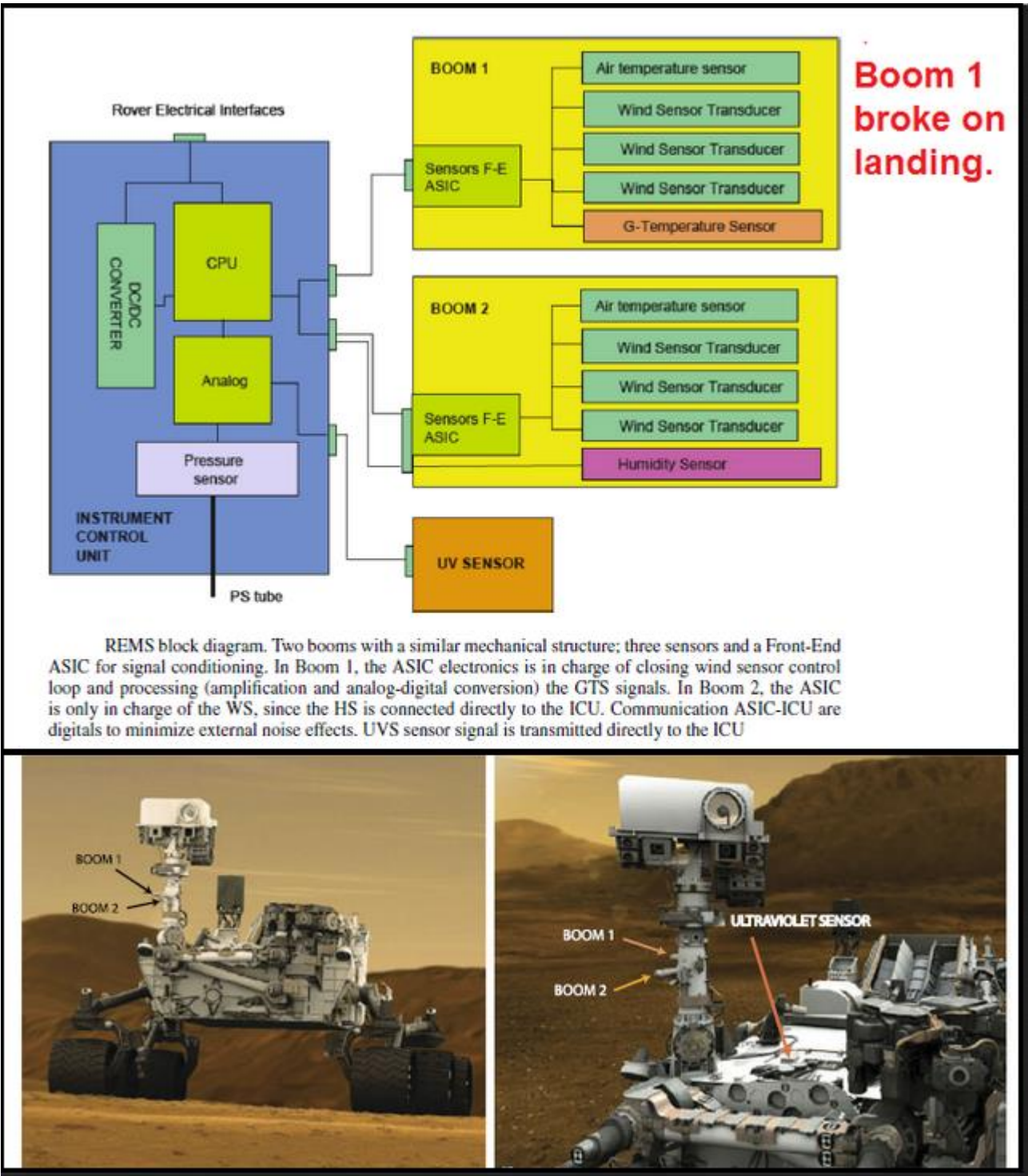


Figure 4 - Weather sensors on MSL Curiosity.

COMPARING PRESSURE DATA CURVES ON FIGURE 5. Comparing revised REMS data with original data is hard because early dating was so out of order so many times, but we did the best we could on Table 1. However when looking at the early parts of this data presentation we do see evidence of data manipulation that smacks of dishonesty. For example, in addition to the more obvious changes in pressures units from hectopascals down to pascals that resulted pressure readings only 1% of the original reported pressures for August 30, and September 1 to 5, 2012, there were four dates that we focused on in our earlier reporting that were somewhat higher than expected. They were for Sols 19, 21, 35 and 40. The new report shows pressures reduced on Sol 19 from 785 to 719 Pa, on Sol 21 from 790 to 741 Pa, on Sol 35 from 799 to 749 Pa and on Sol 40 from 804 to 753 Pa. In each case the net result is to make the pressure curve conform to what was expected based on Viking 1 and Viking 2 pressure curves.

Critique of All NASA Mars Weather Data: By Barry S. Roffman and David A. Roffman

The same is true for Sol 370 shown above on Figure 1 where after we challenged the fact that the 1149 Pa meant the pressure sensor pegged out at the maximum value it could detect, they dropped the reading back to 865 Pa, The data presented thus appears to be a hoax, plain and simple. This trend was definitely repeated when we compared original air temperatures with the new ones. In fact, if the goal was to make Mars look bad, then that is exactly what they did. They took over 70 sols that had high temperatures above freezing and dropped them to below freezing. As the cliché goes, "Oh what a tangled web we weave when we practice to deceive." Martian weather data is based on fraud, but the Government seems to believe that they can get away with it because few people care about weather on Mars. As for why the Government is publishing false data for here let's just say that they were uncomfortable with the results of the labeled-release life detection experiments designed by Dr. Gilbert Levin and landed on Mars aboard Vikings 1 and 2 in 1976. The two landers both detected life, perhaps a bit too fast for Government purposes. [Dr. Levin and what happened to him are discussed on Marscorrect.com](http://Marscorrect.com).

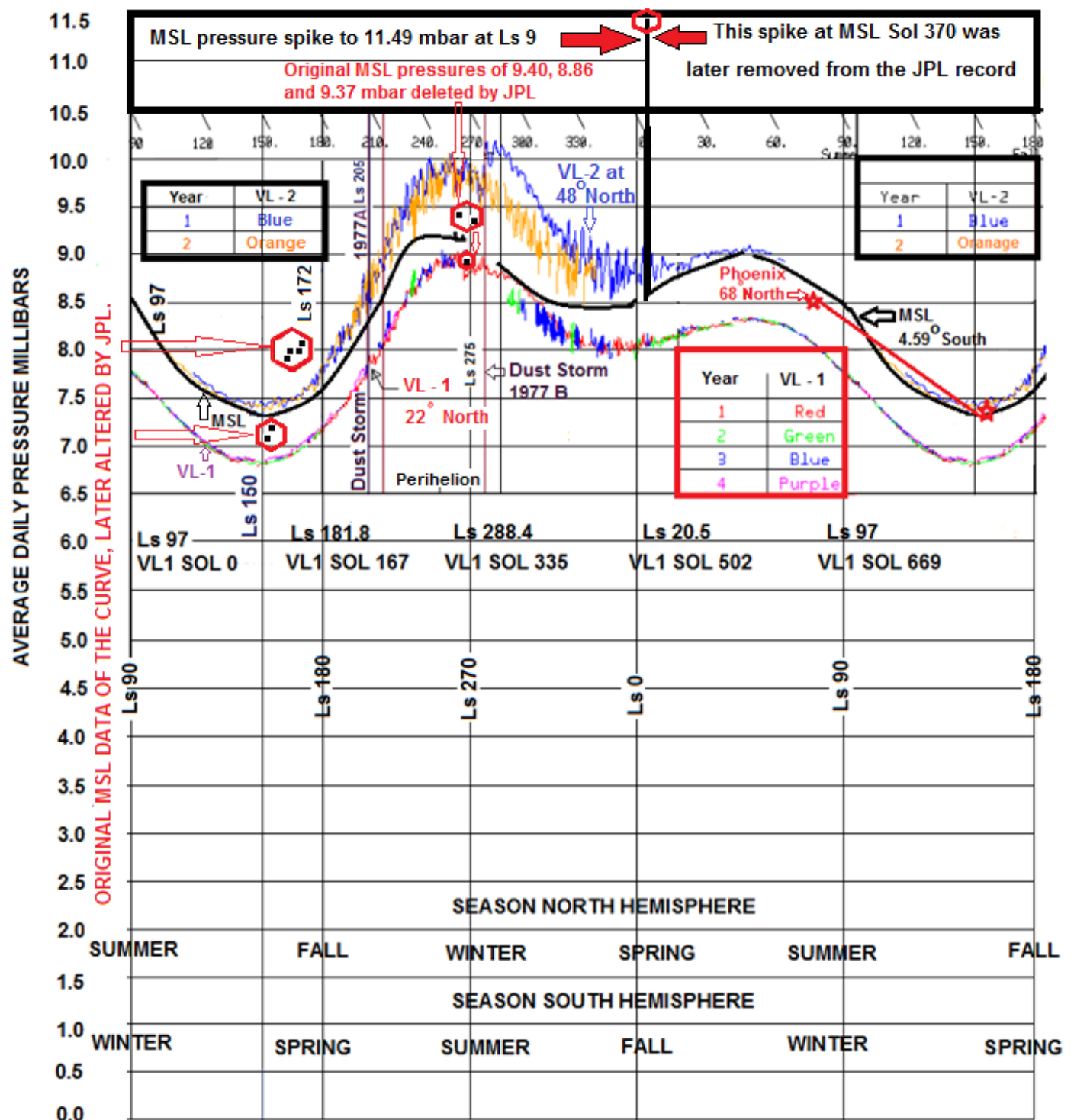


Figure 5: Viking 1, Viking 2, Phoenix and MSL Pressure Record. This graph is based on what JPL displayed AFTER they removed the 11.49 mbar spike on MSL Sol 370 (Ls 9, August 21, 2013). This was the highest pressure ever seen on Mars and one that had the pressure transducer maxed out at its capacity. It was altered by JPL to indicate 8.65 mbar, the same pressure as the sol before and after it. Likewise the REMS Team and JPL altered many other pressures that were off the expected curve. The Viking 1 and 2 curves here are from the Viking Computer Facility. The MSL and Phoenix curves are based on Excel spreadsheets and data hand drawn on Paint in accordance with the data. The actual MSL before and after alteration graphs in shown on Table 1 above.

WHAT DIFFERENCE COULD ALL THIS POSSIBLY MAKE?

The above question is reminiscent of Secretary of State Hillary Clinton's remarks about the attack against U.S. Embassy personnel in Benghazi, Libya. But, in reference to Martian air pressure, it was asked of me by a neighbor (George) here in Cape Canaveral. He's an aerospace engineer whose job is to install instrumentation on the Orion spacecraft. It's supposed to eventually help take astronauts to Mars. George was aware that I have an additional web site besides marscorrect.com (this one, Arkcode.com). He

Critique of All NASA Mars Weather Data: By Barry S. Roffman and David A. Roffman

wanted to know if there's a link between my research about Mars and my investigation of the Torah Code. Was I trying to use one set of data to support the other?

I assured him that when I investigate a controversial topic my "bible" is the scientific method, although when it comes to Mars or any government-sponsored or generated data as mentioned above I also look at the people who produce or release it. With Mars this is an important part of finding the truth because the rule is that all information about Mars must be released by a NASA public relations man (Guy Webster) or his staff. So the public only knows about lander-derived data after the Government lets us know what it wants us to know.

Over the past six years of research two primary conclusions can be drawn from my communications with Webster: (1) By his own words, he's not a meteorologist or an expert scientist qualified to discuss Martian meteorology, and (2) All promises that he has given to me to get answers from the meteorology experts have gone unfulfilled with the exception of a question about how ground temperature data could, in May, 2013, suddenly start flowing from Boom 1. It was damaged on landing back on August 6, 2012.

What this means is that no questioning of data can be addressed without going through a Government public affairs office. This may imply political coloring of data released to (or hidden from) the public. Almost certainly there was a political agenda involved when NASA Director Dr. James Fletcher ordered color monitors at JPL to be manually tuned away from the blue sky that they were originally showing for Viking 1 to a reddish sky. Every picture from that point in 1976 until 2012 showed the wrong sky color.

Only with MSL, 36 years after Viking 1, when they took the dust cap off a camera lens (see [Figure 42E of our Basic Report](#)), [did we see the true sky color \(see Figures 42H and 42I\)](#). Likewise we had to wait until 2011 for NASA to tell us that their original conclusion that there were no organic chemicals at Viking 1 and 2 was incorrect.¹ In 2013 we also learned that there are two pints of water in every cubic foot of soil at Gale Crater, and likely everywhere else on Mars.² At this rate many generations will pass away before we are given a complete portrait of the truth.

So what difference does it all make? The human race is suffering from a massive case of amnesia. Setting aside religious claims about the age of mankind, a quick on-line search for the time when homo-sapiens first arose indicates a time at least 100,000 to 200,000 years ago. Yet we know very little about our ancestors from before about 5,000 years ago, and there's even controversy about the age of the Sphinx in Egypt (Robert Schoch, 1992).³

Is there a link between our ancestors and any civilization that might have existed on the Red Planet? When the Viking 1 Orbiter observed Mars on July 25, 1976 it sent us the famous image of what looked like a face at Cydonia on a 2 km mesa situated at 40.75° North [latitude](#) and 9.46° West [longitude](#).⁴ At the time, Viking chief scientist Gerry Soffen dismissed the "Face on Mars" in image 035A72⁵ as a "trick of light and shadow".^{6,7} However, a second image, 070A13, also shows the "face", and it was acquired 35 Viking orbits later at a different sun-angle from the 035A72 image. This latter discovery was made independently by Vincent DiPietro and Gregory Molenaar, two computer engineers at NASA's Goddard Space Flight Center. DiPietro and Molenaar discovered the two misfiled images, Viking frames 035A72 and 070A13, while searching through NASA archives.⁸ Images taken decades later did not back the original ones, and belief of an alien origin of the face-like mesa has been used to mock and dismiss the work of scientists who backed what was first seen.

Analysis of the face is beyond the scope of this article, but it's tempting to match what looks like disinformation about Martian air pressure to Cydonia. Why would the Government hide the truth about Mars? One only has to look at the panic that ensued when Orson Wells gave his *War of the Worlds* radio broadcast in 1938. Combine that with

reports of radioactive isotopes found on Mars that match what is seen at nuclear detonations on Earth ([Brandenburg, 2011](#))⁹ and it's easy to understand why Governments might want to keep the public from knowing the truth about Mars. While Brandenburg's paper, [Evidence for a Large, Natural, Paleo-Nuclear Reactor on Mars](#) only discusses a natural cause for an ancient nuclear explosion there, his 2011 book, [Life and Death on Mars, The New Mars Synthesis](#), on page 179 forwards the idea of an airburst caused by a great intelligence with great malice.

Do I believe Brandenburg? It's not important although I will say that he should have taken time to edit his book before publishing it. Do I believe in the literal word of the Torah? That's also not important. There are many ways to interpret Torah. Literal is only one of them, and not always the right way. I try to keep my personal beliefs out of my research about Mars. There are intriguing hints in the Bible about contact between someone not human (Nephilim/giants) and the daughters of man in Genesis 6:4. These ideas can be looked at as distractions, but the reality is this. Martian weather doesn't match NASA-backed low Martian air pressure. Both science and religion stress the importance of our past and our fate in the future.

It's generally accepted in science that Mars was once a warmer, wetter world, with oceans. If the air pressure remains high, there is still the question of what happened to its seas. If Mars had life, did it all die, or merely move underground? Did bacteria ever travel from Mars to Earth after an asteroid impact there? Did that play a role in our evolution? Did something much higher up the evolutionary scale make it from there to here, and was it linked to Cydonia or the Bible's Nephilim? Did they influence or color any of mankind's religious experiences or doctrines? These are questions of fundamental importance. The human race often uses religious doctrine to justify wars. However, the Government might worry that data supporting a past not generally in line with the Bible would lead to anarchy and chaos.

Reality is that disclosure would have different effects among different populations. In the Muslim world there might be less of a tendency for young men to shout "Allahu Akbar" (God is great) when committing suicide bombings with the promise of 72 virgins in heaven as a proper reward. But in the West there might be an increase in crime because some might interpret disclosure to imply that the Ten Commandments (or Seven Precepts of Noah) are not dictated by any Higher Authority. Despite the concerns just given, we shouldn't allow any Government to have a free pass when it comes to setting or maintaining common beliefs. Yes, there may be some cultural shock at first. But obviously when it comes to religious differences, we can't all be right. The thrust of my Mars research is about Martian air pressure rather than UFOs, but when I discuss Mars on this site rather than on MarsCorrect.Com, [I'm more open about what I know](#). If alien craft have visited us, and been involved with abductions, then the function of government shouldn't be working with them to obtain technology. It should be defending citizens from abuse.

While I am a Modern Orthodox Jew, I won't tell my readers which religion (if any) to believe. Orthodox Judaism doesn't seek converts, and often even discourages them, preferring to simply recommend that non-Jews follow the general laws of morality found in the [Seven Precepts of Noah](#) (none of which requires belief in God). I will conclude by stating this: With respect to Mars, there *is* an ultimate truth out there. We have seen NASA slowly reverse itself many times about Mars, but the rate of change and funding of manned missions to Mars is inadequate.

I was going to speak again to the International Mars Society Convention in 2014 to present my latest results. However the Mars Society president, Dr. Robert Zubrin, said that I wouldn't be allowed more than the standard (inadequate) 30 minutes to talk. Previously he told me that he could not take a position about our findings because he's not a meteorologist. Clearly he's worried about his relations with NASA. It takes a lot of courage to say that "the Emperor has no clothes." On Martian air pressure, the Emperor of NASA has no clothes. But if Zubrin were to understand and agree to the pressure

findings in our Basic Report and in this article it might make it harder for him to recruit speakers from NASA to his conventions.

Dr. Zubrin isn't always wrong. The first time that I met him was at the Mars Society Convention in Dayton, Ohio in 2010. There he correctly summed up what will be needed for any manned mission to Mars carried out by NASA. He pointed to President Kennedy's May 25, 1961 call to land on the moon before the end of the decade. The speech was made early in Kennedy's administration. We landed on the moon eight years later on July 20, 1969.

Zubrin's point was that for a successful manned Mars landing, the commitment to go must be made early in a president's first term with the landing made by the end of a president's second term. Policies like Obama's (with a targeted manned landing in 2030) involve multiple presidential and congressional elections. This Zubrin sees as the kiss of death. Funding approved by one set of politicians is likely to be overruled by the next. Zubrin's point was reinforced again on July 22, 2014. It was then announced by the Government Accountability Office that the Space Launch System (SLS), scheduled for its first test flight in 2017, has a 90% chance of not meeting that date. The agency's funding plan for the rocket was \$400 million less than what it actually needs to launch by 2017.¹⁰ Fast forward to 2015 and we find that the SLS launch has indeed been set back to 2018.

Whether we try to understand our past or give our species an insurance policy against extinction caused by a future asteroid impact, with our soaring population Mars is a wise investment in opening another home. The Mars One effort to send people on a one-way mission to the Red Planet netted over 200,000 applicants.¹¹

Let's return to the Orion engineer's question. "What difference could (all the findings of this report) possibly make? The answer depends on why NASA is wrong. There are different sets consequences that flow from incorrect weather data due to human error than those that flow from deliberate disinformation. If we are dealing with human error and NASA has understated Martian air pressure by two orders of magnitude because of inadequately designed pressure transducer dust filters, then Martian wind storms would be far more hazardous than imagined. However higher pressure, which may explain why MSL discovered two pints of water in every cubic foot of soil, also makes finding vital resources for life support on Mars far easier. But if we are dealing with deliberate lies then the consequences are much more sinister. Until I turned 60 and was forced to retired from the military due to my age, I served as a Contingency Response/Readiness Planner. I wrote war plans and disaster response plans. An organization like Mars One might need to plan on physically defending its mission from actions that might be ordered by those who are intent on keeping the truth about Mars unknown. Indeed, if the Government policy is to deceive us about finding life in space there are likely actions that have been taken which are criminal in nature. However, if the Government wants the lid kept on this because they don't know how to defend against the threat, then they should feel free to give me a call for advice.

REFERENCES

¹"Study Suggests Viking Lander Found Organics on Mars." *Msnbc.com*. N.p., 04 Jan. 2011. Web. 10 Feb. 2015. <http://www.nbcnews.com/id/40910966/ns/technology_and_science-space/t/study-suggests-viking-lander-found-organics-mars/#.U8vV7rEmUos>.

http://www.nbcnews.com/id/40910966/ns/technology_and_science-space/t/study-suggests-viking-lander-found-organics-mars/#.U8vV7rEmUos

² SA. NASA, n.d. Web. 10 Feb. 2015.

http://www.nasa.gov/mission_pages/msl/news/msl20130926.html#.UxYH5oWmVxt.

³ "REDATING THE GREAT SPHINX OF GIZA Dr. Robert M. Schoch Circular Times." *REDATING THE GREAT SPHINX OF GIZA Dr. Robert M. Schoch Circular Times*. N.p., n.d. Web. 10 Feb. 2015. <http://www.robertschoch.net/Redating%20the%20Great%20Sphinx%20of%20Giza.htm>

⁴ Rayl, A.J.S. (March 16, 2007). ["The Empire Strikes Back: Europe's First Trip to Mars Brings Home 'The Gold'"](#). *The Planetary Society*. Archived from [the original](#) on March 4, 2012. Retrieved April 19, 2013.

⁵ ["Viking 1-61 \(35A72\)"](#). *Viking News Center* (Press release). Pasadena, CA: NASA/JPL. July 31, 1976. Retrieved April 19, 2013. Caption of JPL Viking Press Release P-17384.

⁶ [Hoagland, Richard C.](#) (1996). *The Monuments of Mars: A City on the Edge of Forever* (4th ed.). Berkeley: [Frog, Ltd.](#) p. 5. [ISBN 978-1-883319-30-4](#).

⁷ Paranormal News Staff (August 25, 1999). ["Pixel Inversion - NASA's Misinformation on the Mars Face"](#). *Paranormal News*. Jeff Behnke. Retrieved May 29, 2008.

⁸ Gardner, Martin (Winter 1985–1986). ["The Great Stone Face and Other Nonmysteries"](#). *Skeptical Inquirer* (Amherst, New York: [Committee for Skeptical Inquiry](#)) **10** (2): 14–18. Retrieved April 18, 2013.

⁹ <http://www.lpi.usra.edu/meetings/lpsc2011/pdf/1097.pdf>

¹⁰ Butts, Glenn; Linton, Kent (April 28, 2009). ["The Joint Confidence Level Paradox: A History of Denial"](#). *2009 NASA Cost Symposium*. Cost Analysis Division. pp. 25–26.

¹¹ "Mars One." *Mars One*. N.p., n.d. Web. 09 Feb. 2015. <<http://www.mars-one.com/>>.