

ANNEX I TO
CRITIQUE OF ALL NASA MARS WEATHER DATA, WITH EMPHASIS ON PRESSURE:
Pressures Reported by the Rover Environmental Monitoring Station (REMS),
Mars Science Laboratory Rover Curiosity
Review by Barry S. Roffman
(BarrySRoffman@GMail.Com)

On August 6, 2012, the Mars Science Laboratory Rover Curiosity landed on Mars. No pressure data was released by the NASA or by the REMS team at the Centro de Astrobiologia until August 19, 2012. At that

time the information shown on Figure 1 was released for MSL Sols 9 to 13. Figure 1 was published in conjunction with temperature data on Figure 2; however it only includes MSL Sols 10 to 11.5.

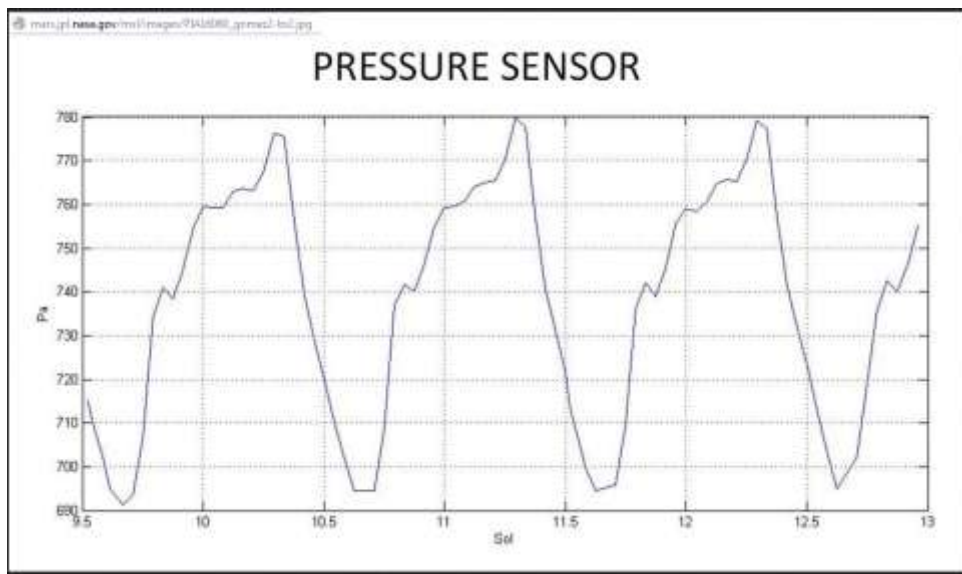


Figure 1 – MSL Pressure data for MSL Sols 10.5 to 13.

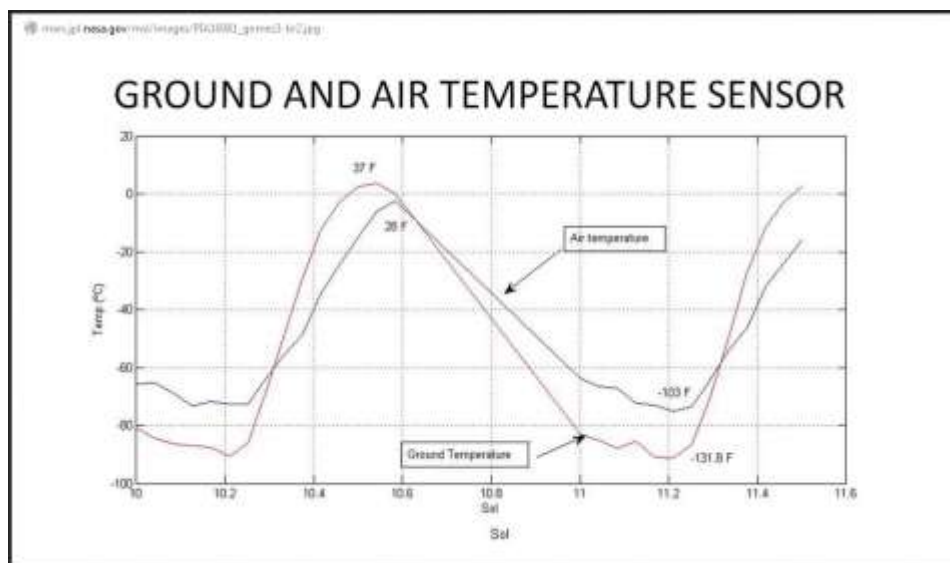


Figure 2 – MSL temperature data for Sols 10 to 11.5.

No further data was released to the public until August 22, 2012 when a REMS Team chart was published for Sol 15 (August 22, 2012). See Figure 3A for it, the Ashima Research version of it, and the corrections that Ashima was eventually forced to make after our extensive Internet campaign against REMS Team and Ashima

Research mistakes in weather coverage for MSL. The Ashima concessions and the Roffman response to them are found at http://davidaroffman.com/rich_text_16.html. REMS revised all data once more on July 3, 2013 (see Figure 3B).

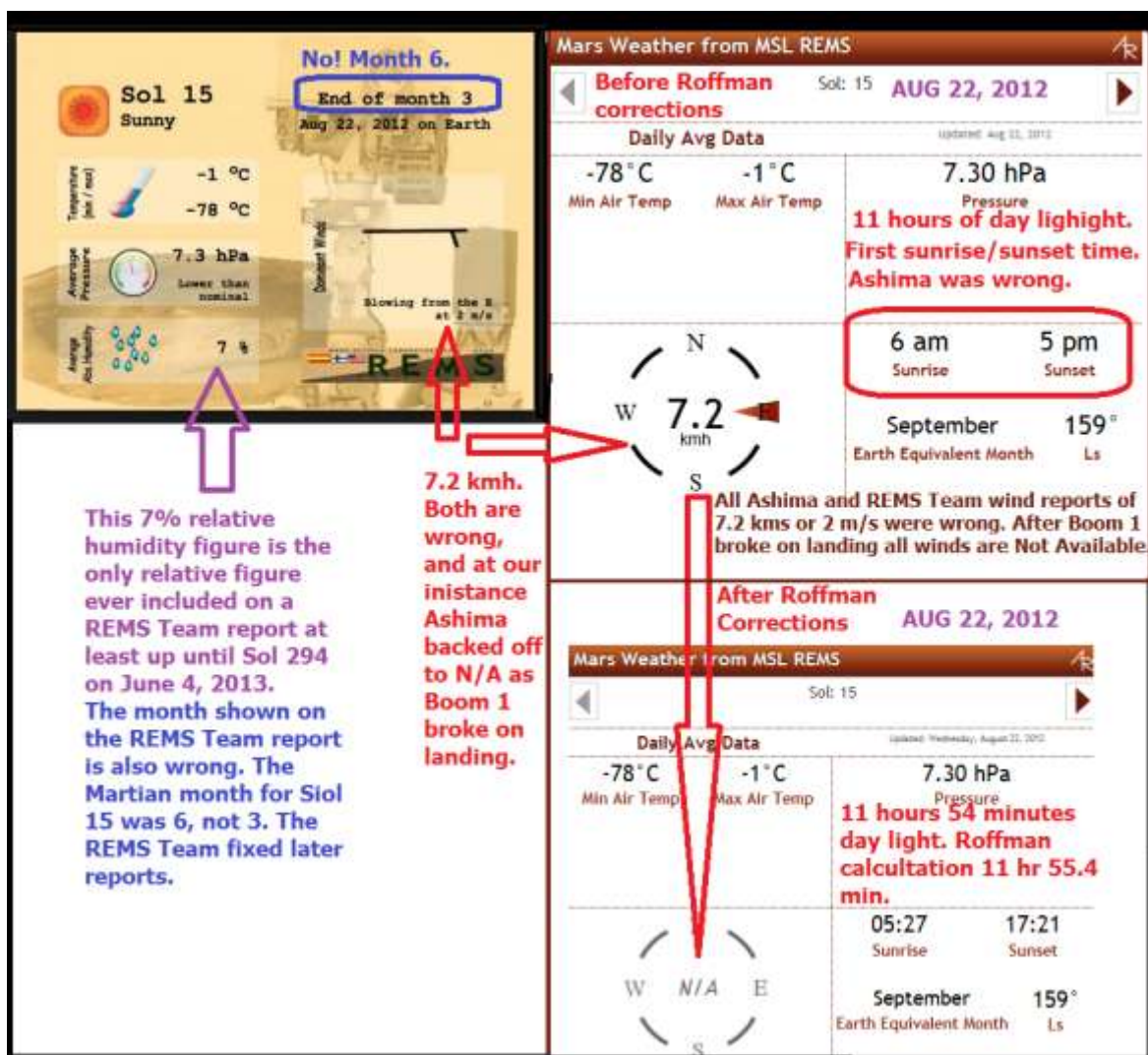


Figure 3A – REMS Team and Ashima Research coverage of weather at MSL back in August, 2013, and how Ashima was forced to alter their reports on May 11, 2013.

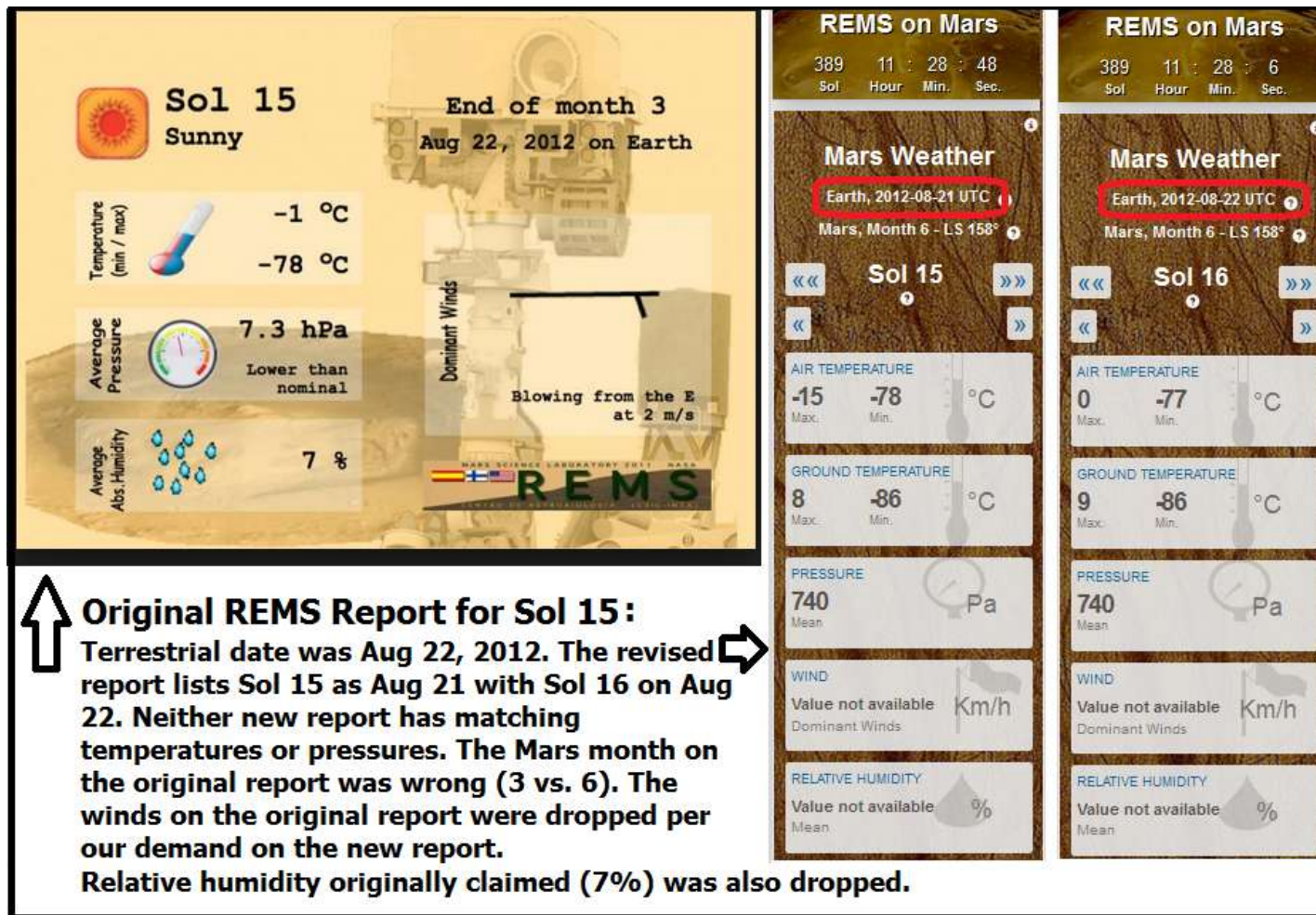


Figure 3B – REMS Team coverage of weather at MSL back in August, 2012, and how their data was revised again on July 3, 2013.

The next pressure released was for Sol 19, then two days later for Sol 21, at which time pressures and other weather data began to be published on a more regular basis, along with numerous obvious errors that frankly seemed to indicate a less than a professional approach to data returned from Mars (see Figure 14A in the Basic Report). Promises data would soon be released in proper fashion at the NASA PDS site were not fulfilled. The total revision of data in July, 2013 cast doubt that any of it was true.

A LOOK AT THE ORIGINAL DATA FROM MSL SOLS 15 THROUGH 299.

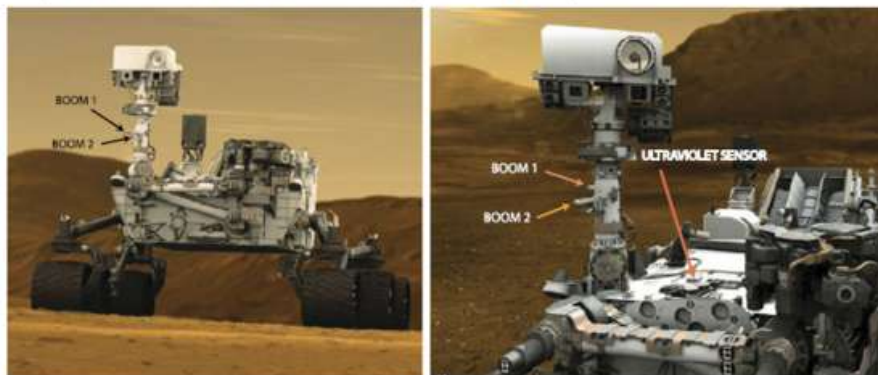
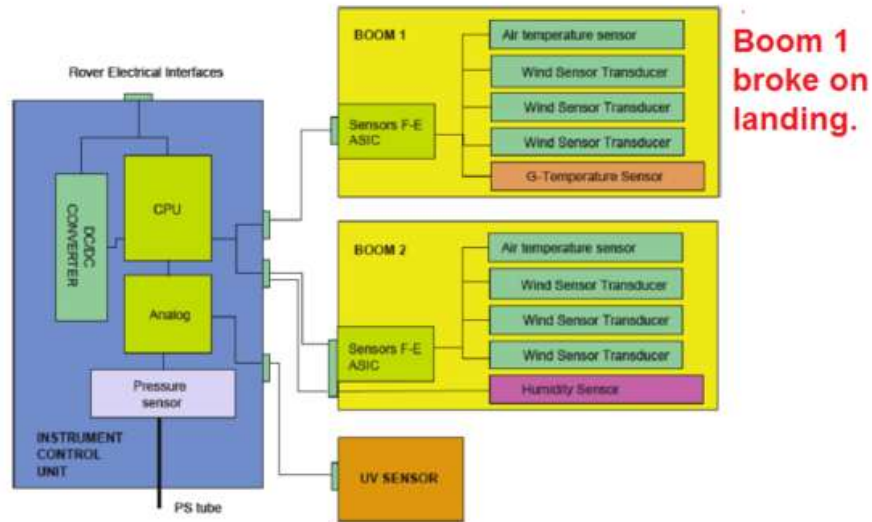
Most of the data shown on Figures 1 and 2 are a close approximation of pressures seen at Viking 2. Viking 2 landed at about 4,505 meters below Mars areoid. MSL Curiosity touched down about 4,400 meters below areoid. In fact, the pressure curves seen for sol-averaged pressures are in general until Sol 370 were so close that they either (1) confirmed Viking pressures, or (2) suggested an identical transducer failure due to a clogged dust filter, or (3) were a manifestation of disinformation with maximum pressures seen (9.4 hPa for the first year) an almost exact match of the original forecast by me published on December 9, 2012 (http://davidaroffman.com/custom3_45.html). But the bizarre pressure of 11.49 mbar on Sol 370 showed that something was radically wrong on that day – perhaps a hard bump jarred the dust clot and allowed the pressure sensor to peg out at the maximum value on that day.

Those favoring Option (1) must explain the all-time record pressure of 11.49 mbar on Sol 370. I asked Guy Webster of JPL for clarification and received none.

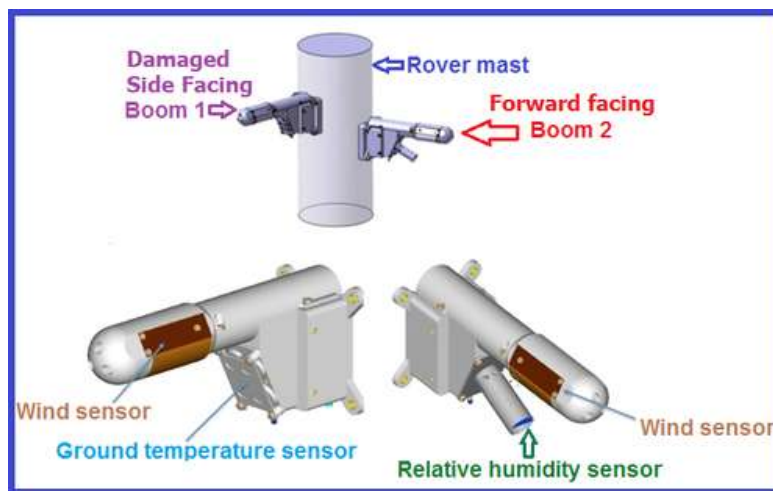
Option (2), of course, has been our primary working hypothesis. The problem with it is that we are dealing with two types of transducers (Tavis and Vaisala) that had to fail in exactly the same manner, and produce pressure readings that were somewhat consistent despite different size dust filters and air intake tubes. However, the critical factor may be not so much the diameter of the air tube or the area of the dust filter. Rather, it may be the tremendous speed at which air and dust rushes into the air tube, thus clogging them at about the same point during what would have been a pressure equalization time had it not been for the filter separating the transducer from the ambient conditions.

The Option (3) disinformation possibility seems backed by nearly a year of patently false data that was in many cases retracted by the REMS Team and Ashima Research.

Option (3) is further suggested by Figure 2 because it shows both air *and* ground temperatures. Boom 1 broke on landing, so the question is how did anyone manage to publish any ground temperatures ever? I asked JPL's Guy Webster about this. On July 23, 2013 he wrote, "[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>.](#)" But he never answered my questions about why they dropped so many air temperatures radically in July 2013. There were no daily ground temperature reports published before then. The booms in question that broke on landing are shown again as Figures 4 and 5.



Above: Figure 4 - The Remote Environmental Monitoring Station (REMS) weather booms on MSL Curiosity. Below: Figure 5, a close up of the RMS weather booms.



A close examination of data released indicates that there are so many problems with it as to raise a question of whether or not the REMS Team, or someone on it, was trying to tell the world that Mars has far more pressure than was ever indicated before, and that this pressure is why we see all the weather that do on Mars in conjunction with dust devils, dust storms, spiral storms over Arsia Mons, and moving sand dunes discussed in the Basic Report.

The concerns just raised are based on the rather odd set of data published by REMS for Sols 25, 26, 27, 28 and 29 from September 1, 2012 to September 5, 2012. For these five days pressure reported suddenly increased from a previous report of 7.4 hPa (Sol 24 given as August 30) to 742 hPa. On September 5 for Sol 29 the pressure reported was 747 hPa, but this dropped to 7.47 hPa on September 6, 2012.

The initial logical explanation for the above oddity is that for five days whoever was responsible for REMS reports simply confused Pa and hPa. 7.47 hPa equals 747 hPa. There were many people (including our father-son team) that noticed this mistake and brought it to the **immediate** attention of Guy Webster at JPL and we assume the REMS Team, but the anomaly persisted for those five days. The pressures equaled what would be seen on Earth at an altitude as low as 8,192.6 feet (2,497.1 meters).

To understand what is really going on at the MSL, we need to see the hourly pressures and temperatures. To this 13 month point, we have only seen Figure 1 for pressure variation over sols 9.5 to 13; and Figure 2 with its temperature graph for 1.5 sols. We also have the words of the first REMS Team report at http://www.cab.inta-csic.es/remes/Doc%20Weekly%20Report/WR_report1_english_30092012.pdf. It states:

This first weather report covers the first weeks after landing (5 Aug 2012) until mission Sol 19 (25 Aug 2012)... Pressure

measurements show a mean pressure of roughly 730 Pa.

*The pressure data also show a very significant daily variation of pressure. The minimum is near 685 Pa and the maximum near 785 Pa. **The pattern of pressure change across the Sol is very similar from Sol-to-Sol.** The majority of the variation is due to large scale waves in the atmosphere called tides. These tides are different from tides in the Earth's ocean because they are forced by heating due to the sun rather than the gravitational pull of the Moon.*

Rebuttal to the Tides Concept. Of course the pressure figures above were later trashed by JPL. But when the REMS Team linked pressures to temperatures, they missed our point that just as we saw with the Vikings, as is seen in the very tiny bit of data that the REMS team allowed us to see, the peak pressure comes very close to the time of minimum temperature when we would expect to see the most heat applied to the Vaisala transducer from the RTG. Likewise, pressure declines rapidly as we approach the point where the ground temperature is actually often above the freeing point of water when no heater is needed. A quick look at the original data for Sols 15 to 294 showed 89 days with a high above the freezing point of water, 14 at the freezing point, and 77 below it through May 21, 2013 (no data was published for the missing 106 sols – some dates were obviously in error). But these figures too were trashed by JPL on July 3, 2013 as we showed in Table 7 of the Basic Report (repeated below for convenience of the reader:

TABLE 7 from the Basic Report - MSL Temperatures Altered by the REMS Team in July, 2013			
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

The inverse relationship between temperature and pressure is shown on

Figures 6A to 6D. As with the Vikings, we contend that this pattern is only likely to occur if the dust filter for the transducer clogged on landing, thus leading to the heating and cooling of air in a sealed container out of contact with ambient air.

Looking back at Figure 1 in this Annex and looking ahead at most of Figure 7, we would expect to see a very slow but steady growth in pressure as we move away from winter at the south pole of Mars and move into spring there. However, as Figure 7 shows, there were four early pressures for MSL that were originally significantly off the expected curve - Sols 19, 21, 35 and 40. For those days the pressure recorded exceeded what was seen at the lower Viking 2 by about 0.5 millibars (0.5 hPa). These pressures were all altered by JPL after we pointed them out.

As is noted under Figure 7, the black pressure approximation MSL pressure curve shown under the Viking 2 Year 1 and 2 pressure curves does not include any pressure data for MSL Sol 1 to 9.5. This is because no pressure data was published for this critical period that might indicate anything about whether the dust filter for the FMI's Vaisala pressure transducer jammed on landing. There were several other MSL Sols for which data was originally missing but values for them popped up with the July 3, 2013 revision of data. When initial missing data was combined with off expected pressure curve data for MSL Sols 19, 21, 35 and 40, and pressures that were reported as being between 742 and 747 hPa between MSL Sols 25 and 29, it can be seen that it took a considerable period of time for a consistent pressure picture to emerge. All of this was blown by the Sol 370 pressure of 1149 Pa.

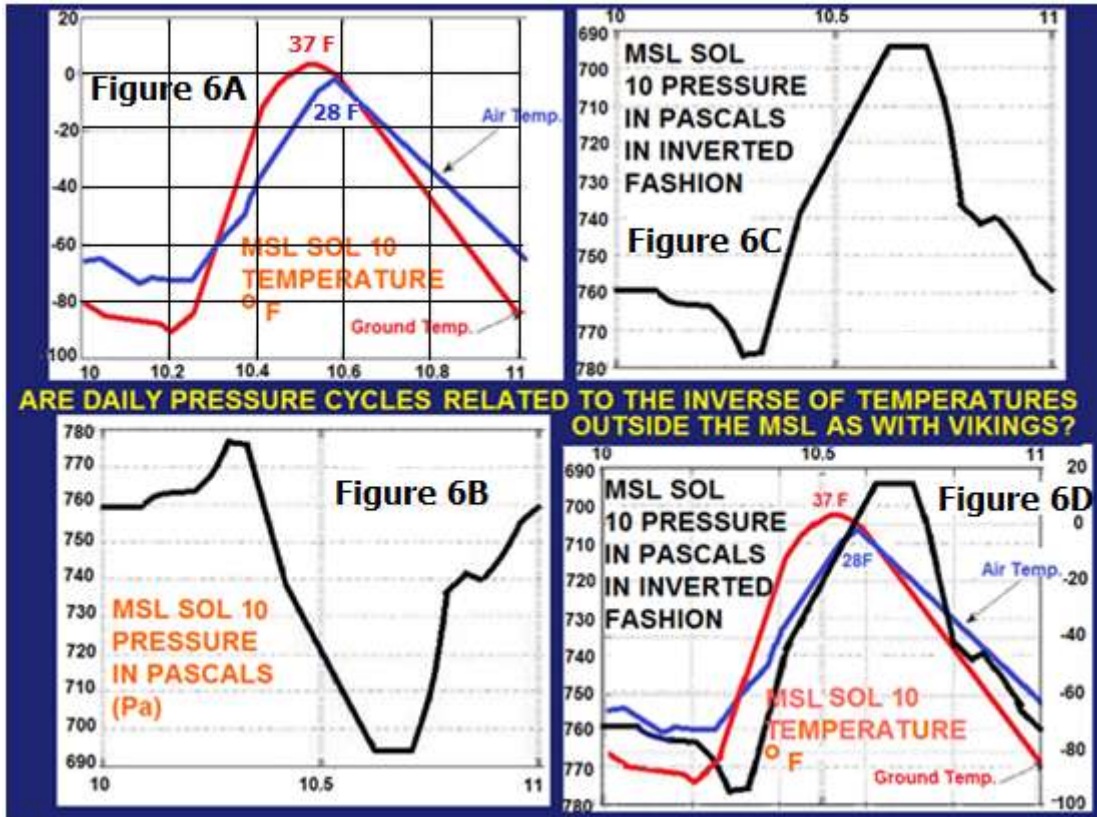


Figure 6A to 6D – As was seen with the Vikings, temperature and pressure were inversely related for the Mars Science Laboratory in the very limited REMS Team data released.

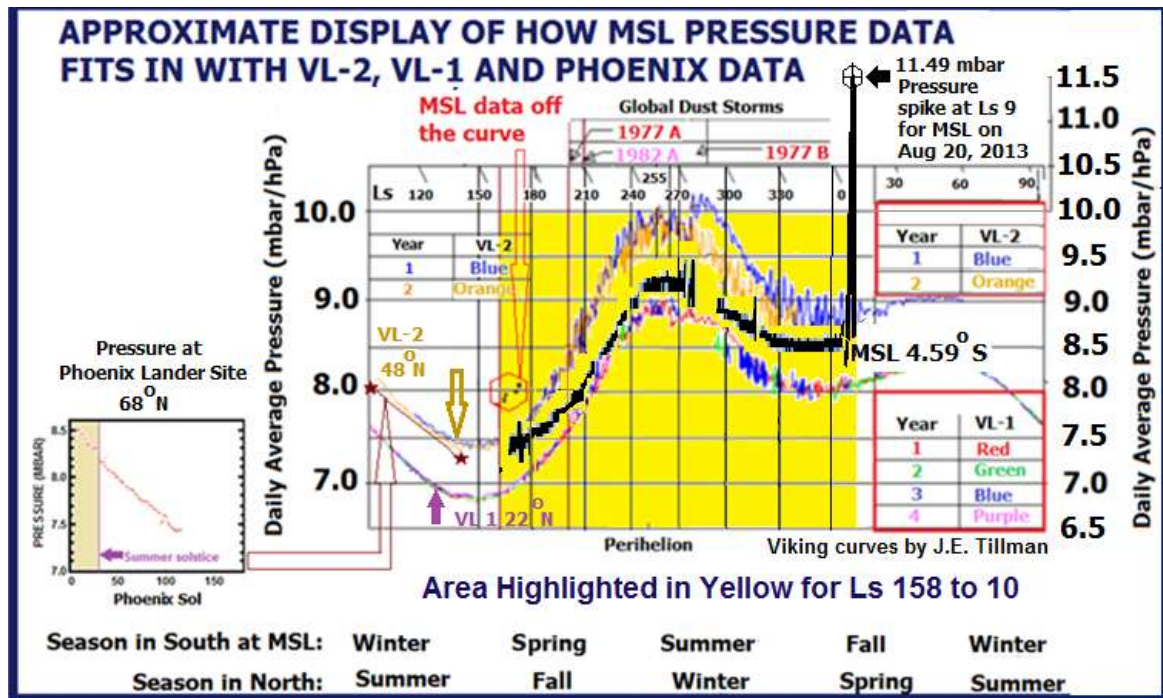


Figure 7 – The two large (most complete) curves show pressure fluctuations over 4 Martian years at Viking 1 and 2 sites. On the left is a reproduction of the data on Figure 12 (Basic Report) for Phoenix. The starting and ending pressures for Phoenix are also represented by stars and a straight line connecting them. It can be seen that the Phoenix data most closely matches Viking 2; and that the pressures reported for MSL Curiosity are (with the most notable exception of 11.49 mbar at Ls 9) generally close to the pressures seen at the same position in the Martian orbit around the sun. This composite figure is adapted from the Tillman, Viking Computer Facility, University of Washington; for Phoenix from Nelli et al., 2009, and for MSL largely from the revised REMS data of July 3, 2013. MSL Curiosity and Phoenix both carried similar Vaisala pressure transducers. For MSL Curiosity there is no ability to measure pressure above 11.5 mbar. See Figure 8 in Annex I for an inclusion of original REMS data for MSL Sols 15 to 87 which covers Ls 158.8 to 199.8.

What we are looking for the first 11 months was a pattern of missing data up front, missing data after it, misreported data, and data off the expected curve up front. Then the pattern settled down to what we would expect based on the Viking 2 pressure curve. So long as this trend continues, we must finally come to the most essential question in this four year pursuit of the truth about Mars. The weather seen does not match the pressure advertised. Should we ignore it and march to the tune of the curves on Figure 7? Since the MSL curve is essentially what was predicted for a transducer with a clogged dust filter until Ls 9 (Sol 370), then unless the match exists because the pressure sensors all clogged in exactly the same fashion with the same amount of air trapped behind the dust filters for each transducer, the curves would seem to either reflect the strange truth, or they must deliberate disinformation. There is an obvious question of motive that will immediately arise from the question being considered at all.

It is well known that initial reports of positive life signs seen by Viking 1 and 2's Labeled Release (LR) life detection experiments were improperly dismissed for 30 years until the rejection of organic chemicals found by the Vikings was overturned by Dr. Christopher McKay of NASA Ames on January 4, 2011. It is also well known that that MSL has the assignment of looking for life. But there is an old bit of wisdom. Be careful about what you're looking for, because you just might find it (and it might not be so pleasant).

NASA has done much to prepare us for a Mars with ancient, primitive life. When green patches were seen on rocks during the early color transmissions from Viking 1, and the suggestion was made that they might be lichens (see Section 12.2 of our Basic Report and Levin, G.V. (1997), this was

enough to raise some eyebrows. But what if something more was seen; something with unpleasant implications? What then? Would it serve as justification for hiding or altering data that would lead to an accurate portrait of Martian history? There was a report published by the 42nd Lunar and Planetary Science Conference (2011) with disturbing implications. It can be found here: <http://www.lpi.usra.edu/meetings/lpsc2011/pdf/1097.pdf>. The paper argues for "Evidence for a large, natural, paleo-nuclear reactor on Mars, similar to one in the region of Oklo in Africa a billion years ago."

The paper is controversial enough. Unfortunately its author (Dr. John Brandenburg, who we are very familiar with) was in a hurry to capitalize on his sensational paper (which made the national news). He quickly followed up on his new found fame with a poorly edited book that revealed his real thoughts – that altered the picture of what had happened on Mars from a natural event in the ground to an (unnatural) nuclear airburst.

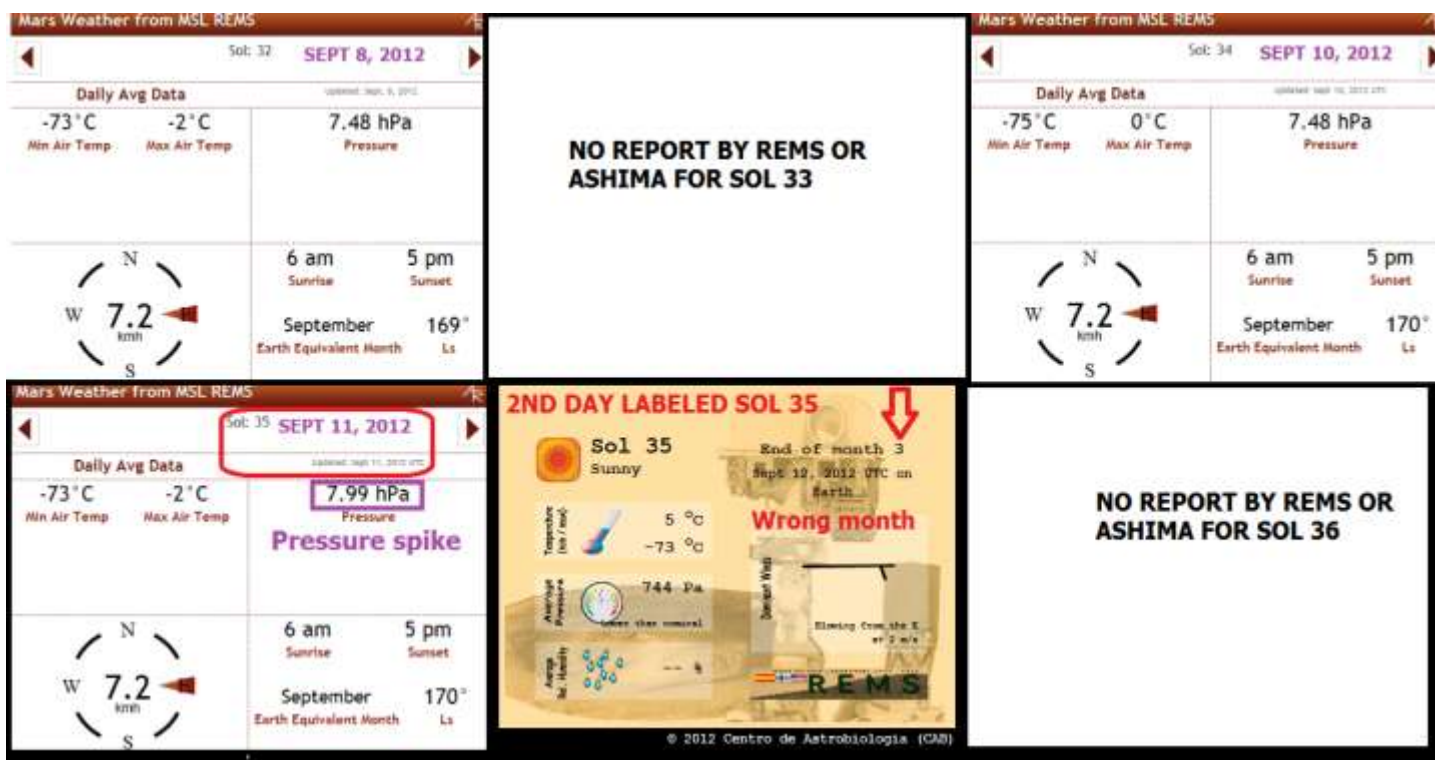
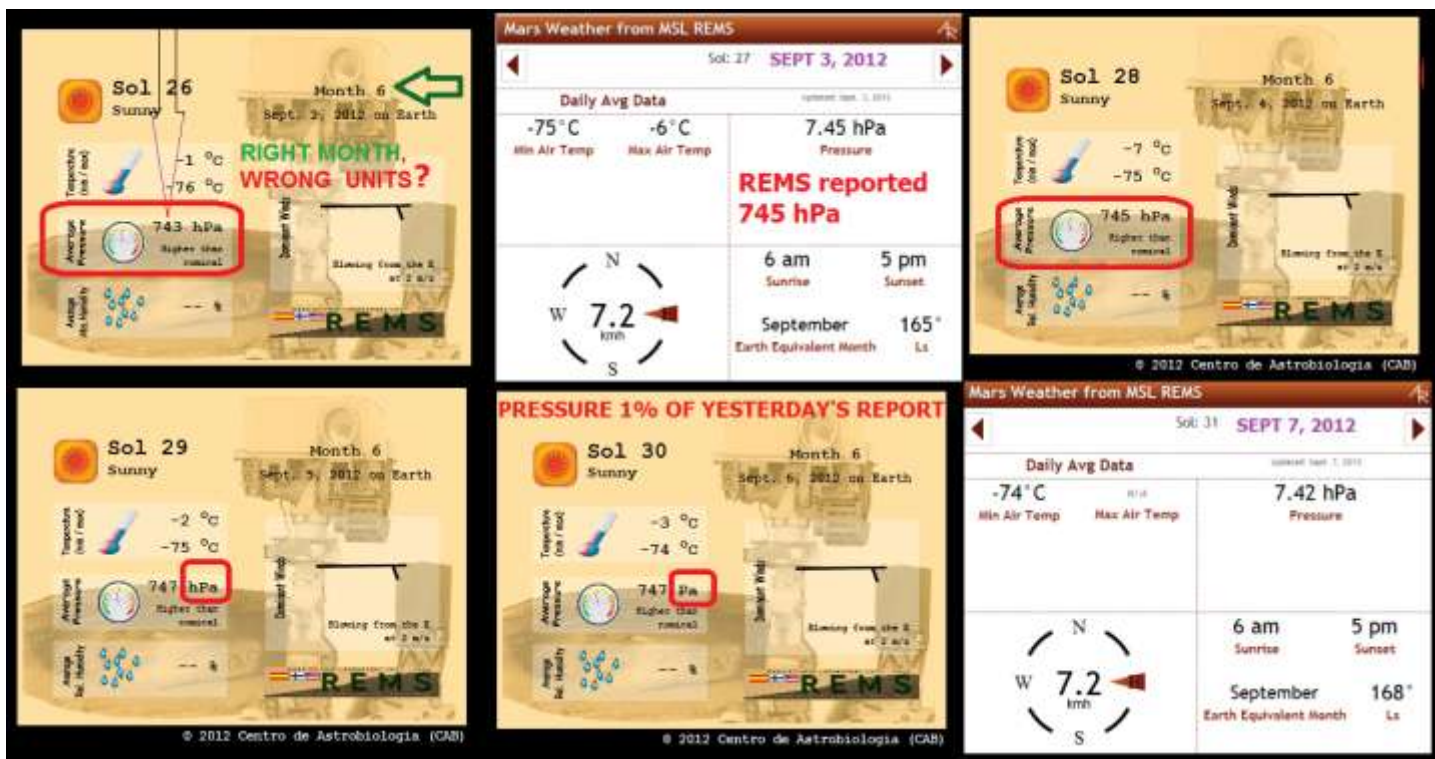
In science (as with quantum mechanics) sometimes the bizarre turns out to be true. It is beyond the scope of this report to comment on the above nuclear paper, but given the questionable way that pressure data has been handled by the REMS Team and Ashima Research, the known structural problems associated with Tavis and Vaisala pressure transducers, and the weather that simply does not make sense with pressures under 10 hPa, it may be worthwhile to examine the nuclear hypothesis in conjunction with a full review of Martian air pressure data.

Appendix 1 has shows the record for REMS and suggested corrections reports. Where REMS reports were missing and Ashima reports were available, they are shown with their original errors.

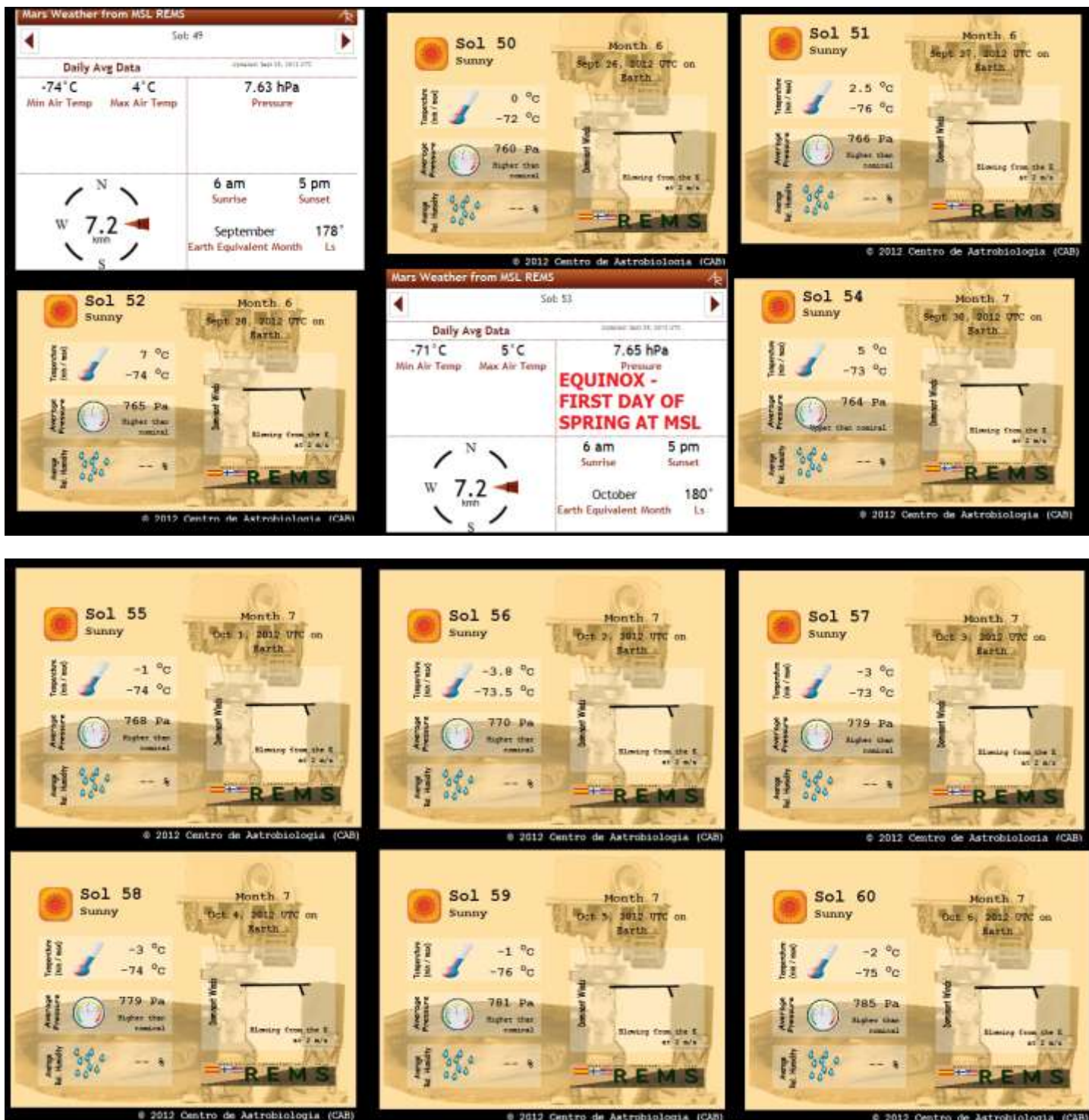
APPENDIX 1 TO ANNEX I TO CRITIQUE OF ALL NASA MARS WEATHER DATA, WITH EMPHASIS ON PRESSURE: Print Screen Record of Original REMS Team and Ashima Research MSL Weather Reports

This Appendix displays REMS Team and Ashima Research weather reports prior to and after Ashima's confession that they were largely false, especially with respect to all wind data (both types of reports) and sunrise/sunset data (Ashima only) and before their July 3, 2013 total revision of all published reports. The point in displaying these reports is to show how when unchecked by unaffiliated scholars like the Roffman Team, NASA and its affiliates have a record of publishing fiction as fact. It is especially important to remember this idea when comparing NASA's published pressures for Mars. It seems obvious that those within the NASA establishment are too concerned with job security to declare that "the Emperor has no clothes." Martian pressures that do not match weather plainly seen should not be automatically rejected.



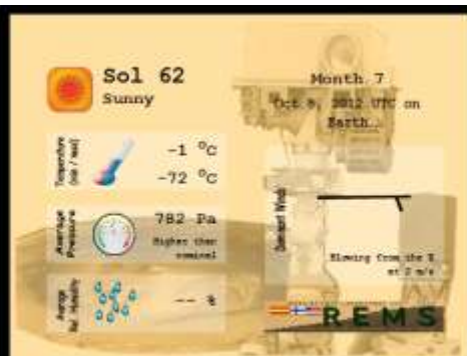








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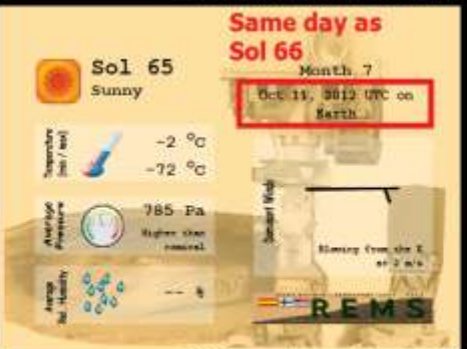
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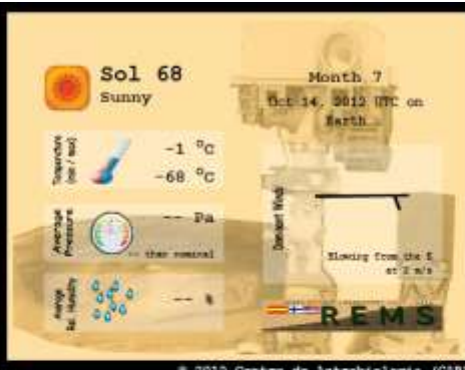
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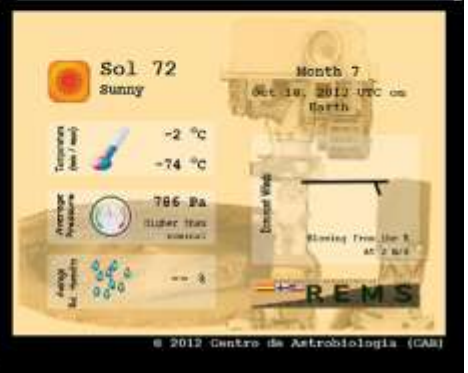
NO REMS OR ASHIMA REPORT FOR SOL 69



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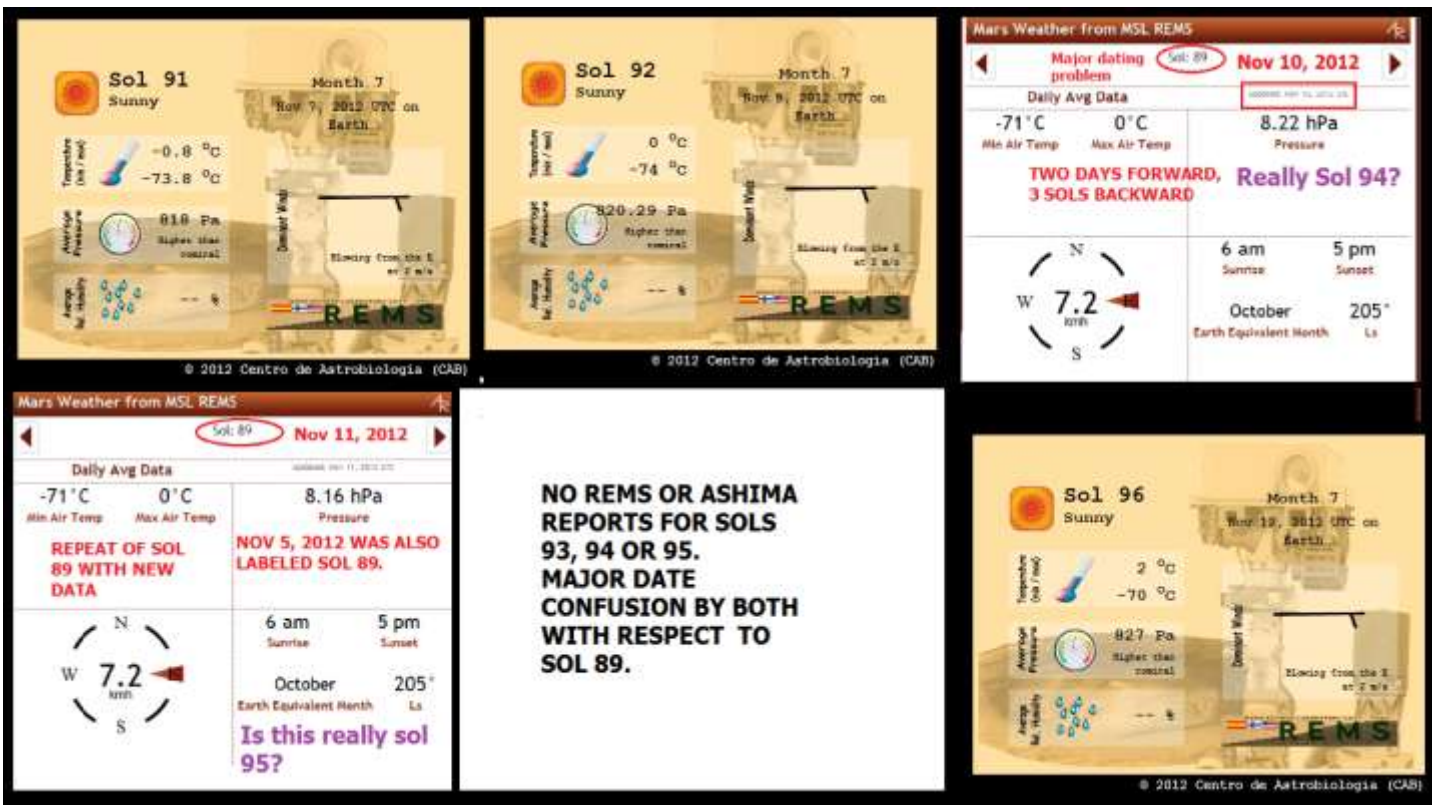


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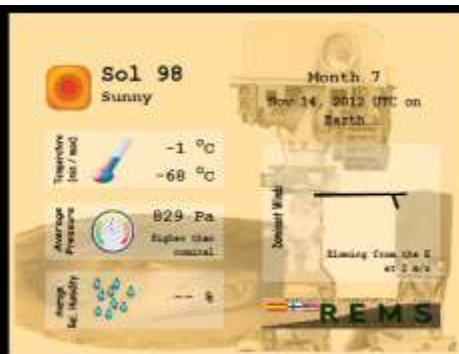
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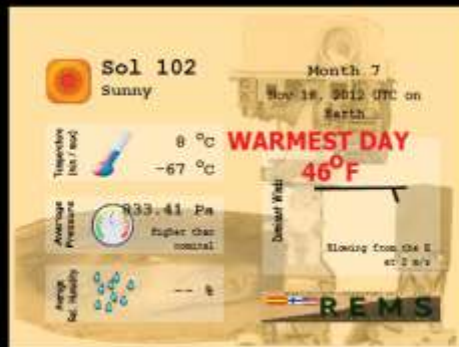


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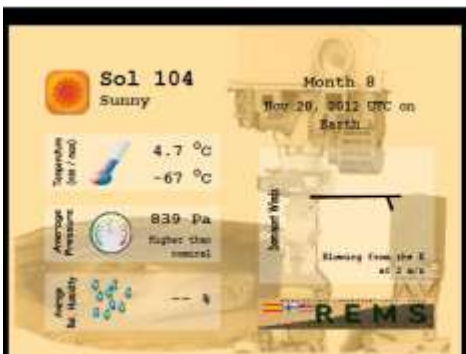
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**NO REMS OR ASHIMA
REPORTS FOR SOLS
100 OR 101.**



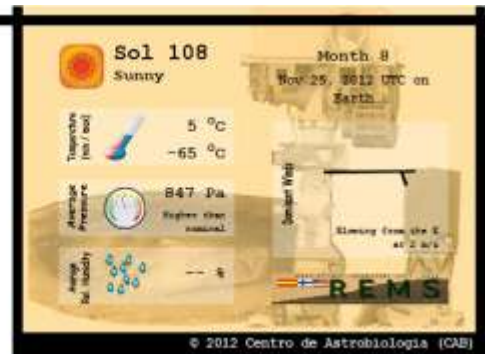
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**NO REMS OR ASHIMA
REPORT FOR SOL 103.**



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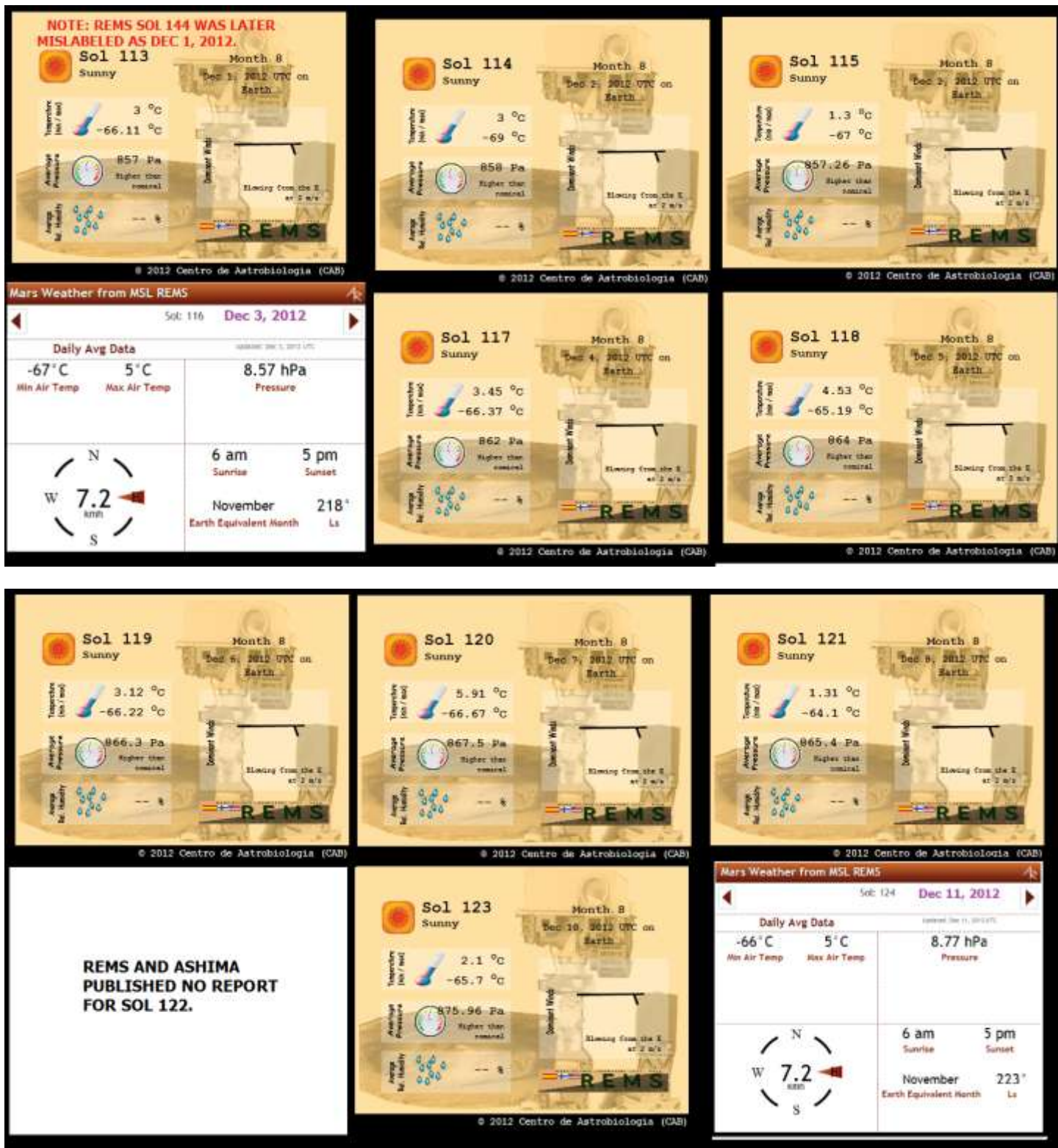
**NO REMS OR ASHIMA REPORTS
FOR SOLS 105 TO 107.**



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**NO REMS OR ASHIMA
REPORTS FOR SOLS 109
AND 110.**





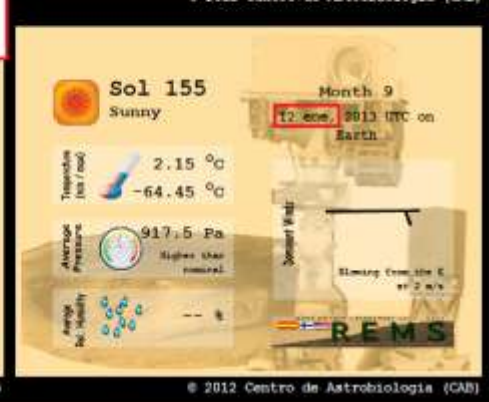
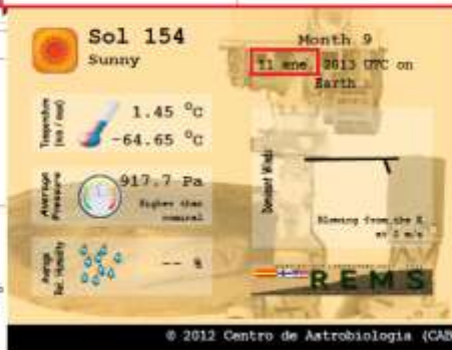
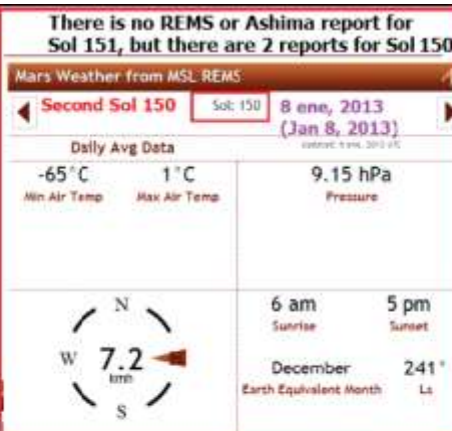
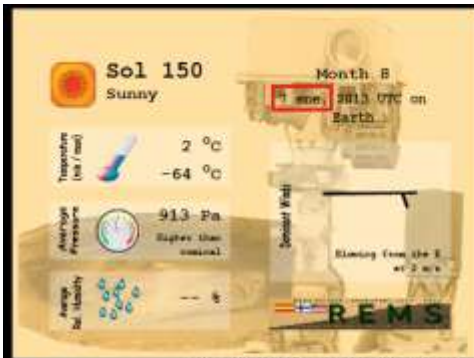


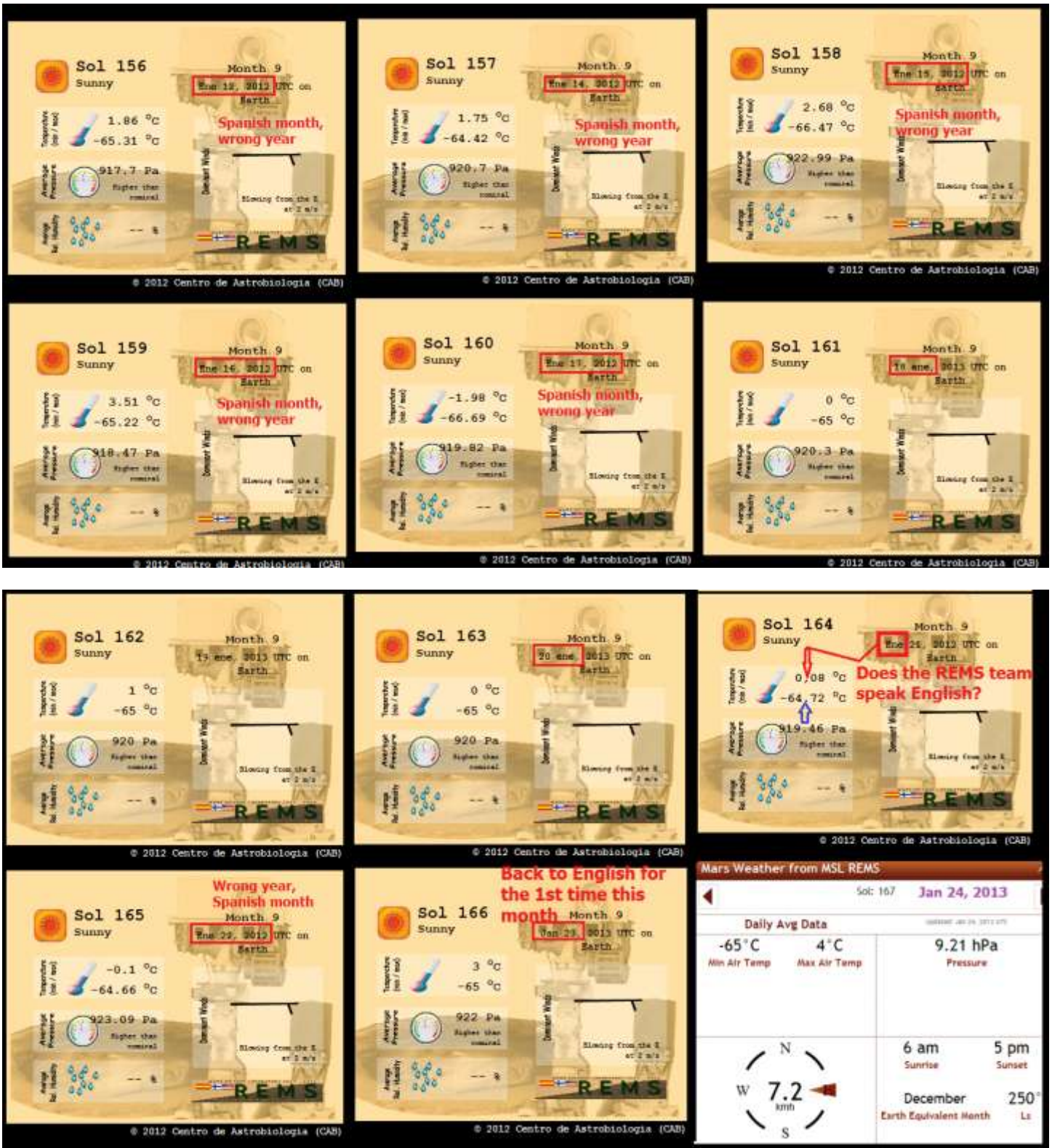


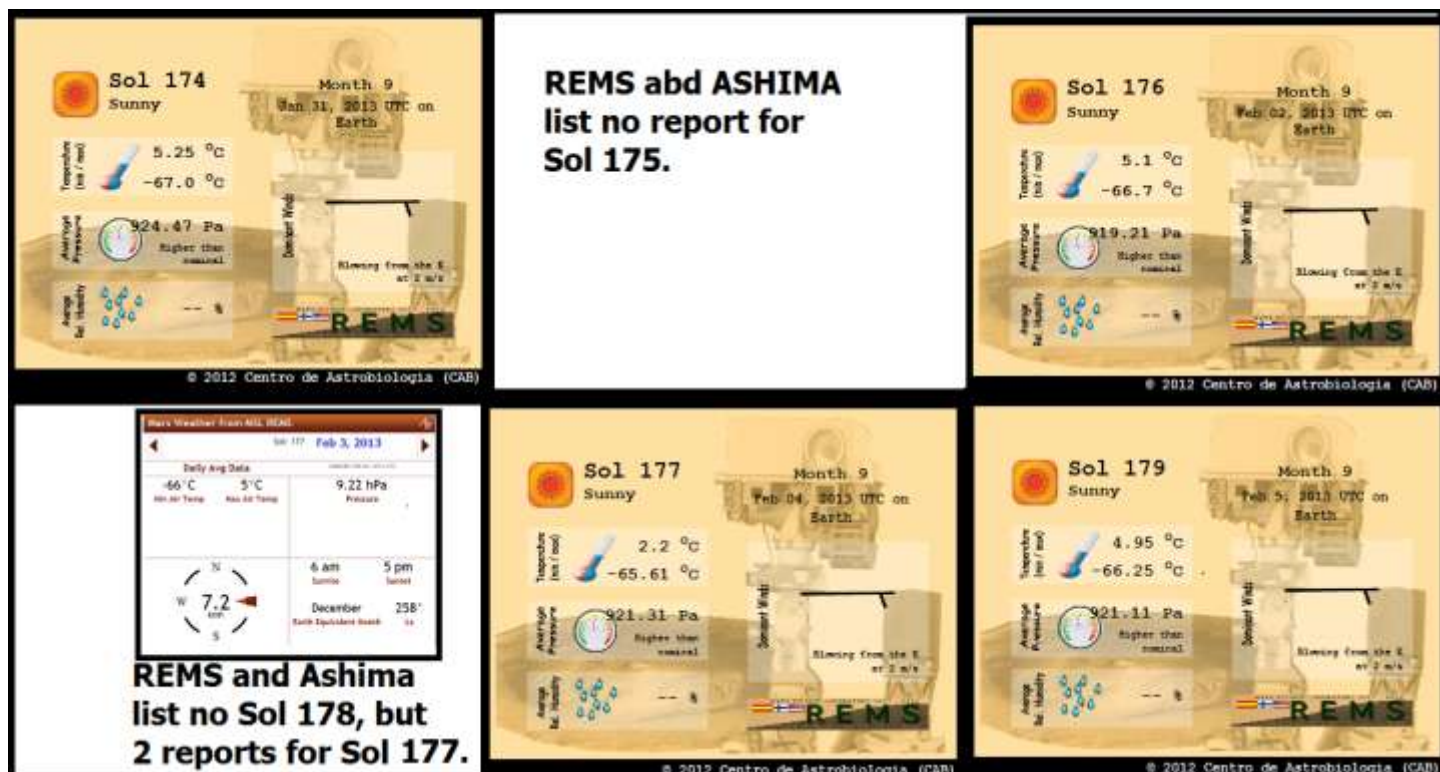
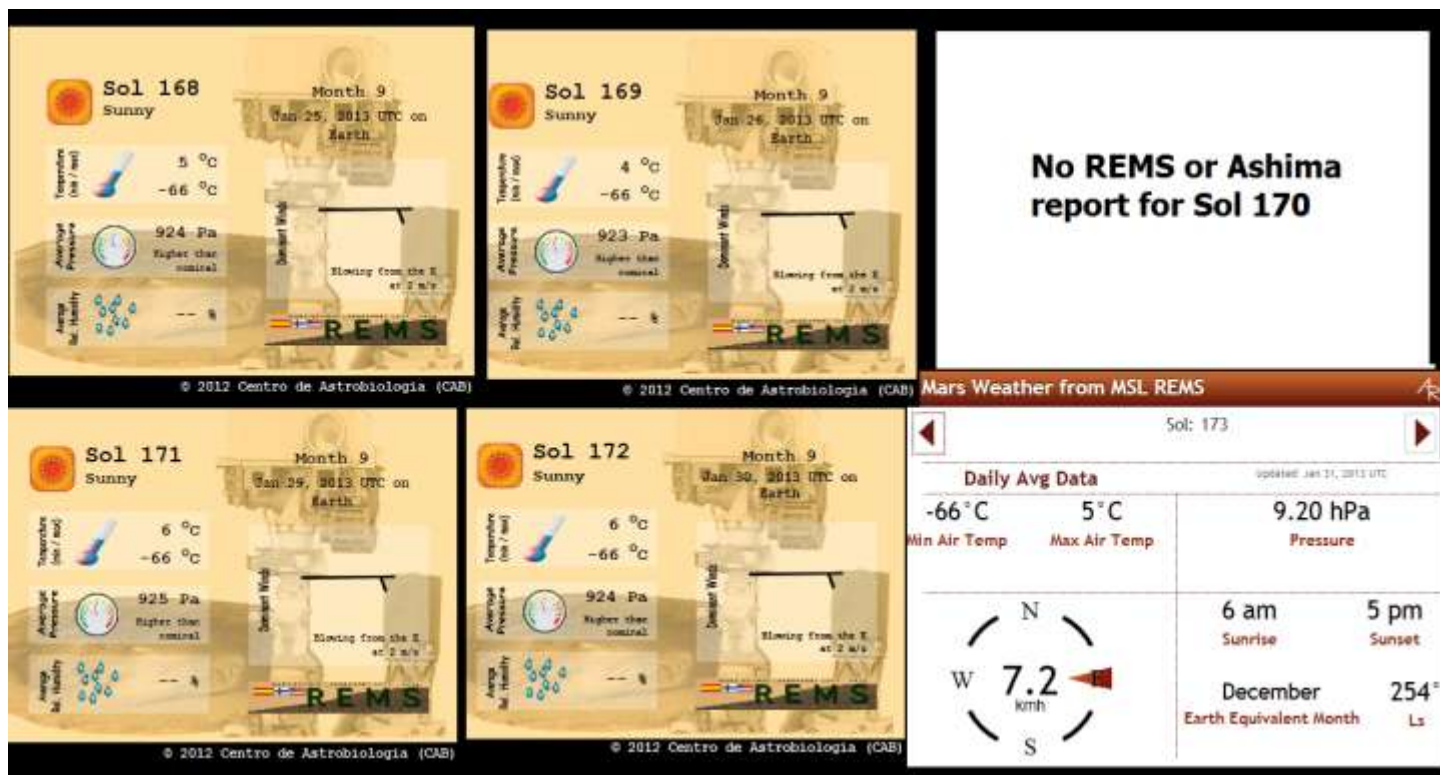
SAME SOL NUMBER 144, BUT 30 DAYS APART WITH PRESSURE THAT FITS DEC 1 BETTER THAN DEC 31!

THERE IS NO REMS OR ASHIMA REPORT FOR SOL 145.

THERE IS NO REMS OR ASHIMA REPORT FOR SOL 147 OR SOL 148.

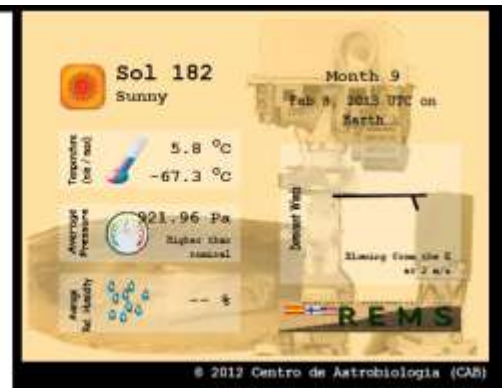








No REMS or Ashima Report for Sol 181



No REMS or Ashima Report for Sol 183



No REMS or Ashima Report for Sol 187

