

MARS CORRECT: CRITIQUE OF ALL NASA MARTIAN WEATHER DATA

Curiosity rover: Martian solar day 177
NASA's Mars Exploration Program (source images: NASA/JPL-Caltech)



**By Barry S. Roffman,
Lieutenant, USCG-Retired
January 29, 2015**



Why go to or care about Mars?

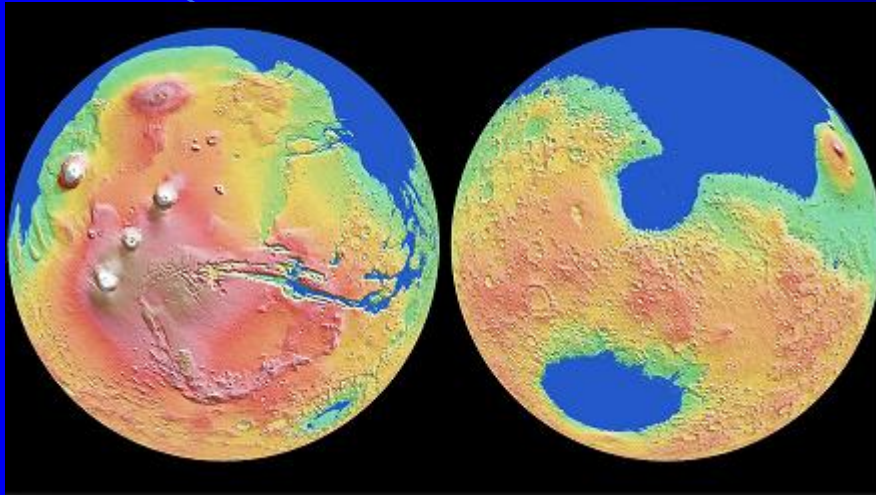
Many think life started on Mars, came here via meteorites



- ❑ An asteroid or comet probably wiped out dinosaurs here.
- ❑ The last asteroid near miss was January 26, 2015 (diameter 1,800 feet).
- ❑ We have all our survival “eggs” in 1 basket (Earth).
- ❑ Martian land area = Earth’s, + it has natural resources. We may need it for a future home.

Why go to or care about Mars?

- Mars once had an ocean, and likely life. It may still have life (lower forms likely, past higher forms possible).



- The key to our place in the universe may be on Mars.
- Mars provides science/career goals to make the future exciting to today's youth.

Air pressure is central to establishing a human presence there. Accepted average pressure 6.1 Mbar at Mars areoid

- Areoid is Mars equivalent of Sea Level.**
- Average Earth sea level pressure = 1,013.25 Mbar.**
- 6.1 Mbar is nearly a vacuum – no fun to experience.**



Martian Sky Color is an Issue.

In the Moon's vacuum the sky is black.



© James Clash

At high altitudes over Earth, like 83,600 feet, (with 11.3 mbar) our sky goes black.

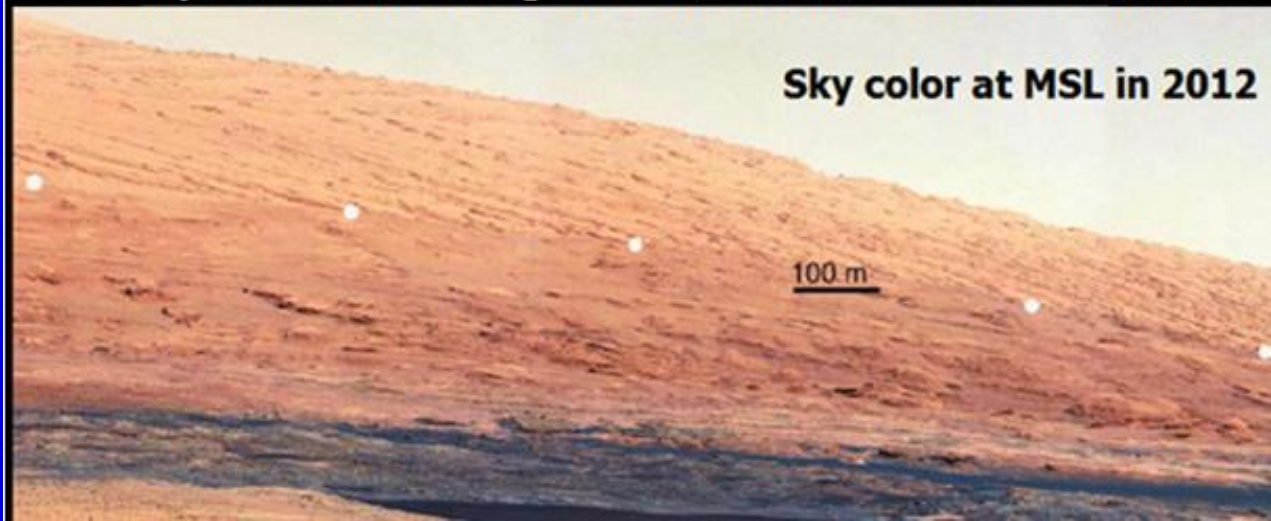
**Why is the Martian sky so bright with under 10 mbar pressure
What color really is it anyway?**

Original color seen.



Sky color after order to alter color monitors by NASA Administrator Dr. James Fletcher.

Sky color seen at Viking 1 in 1976 - before and after alteration



Sky color at MSL in 2012

100 m

Initial Cause to Question Accepted Pressure

- **Dust devils on Mars and Earth are similar.**
(seasons, electricity, core temperature rises, formation times and often size but they can be much bigger on Mars)

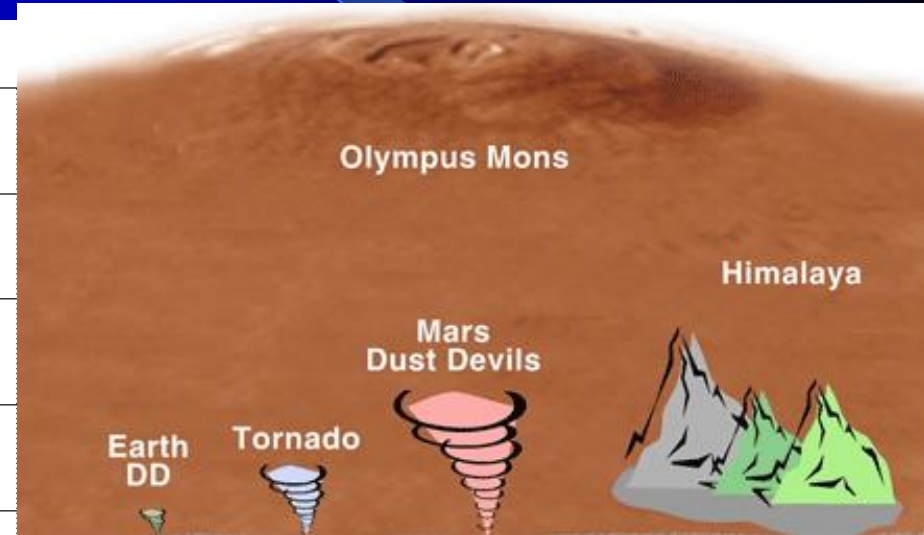
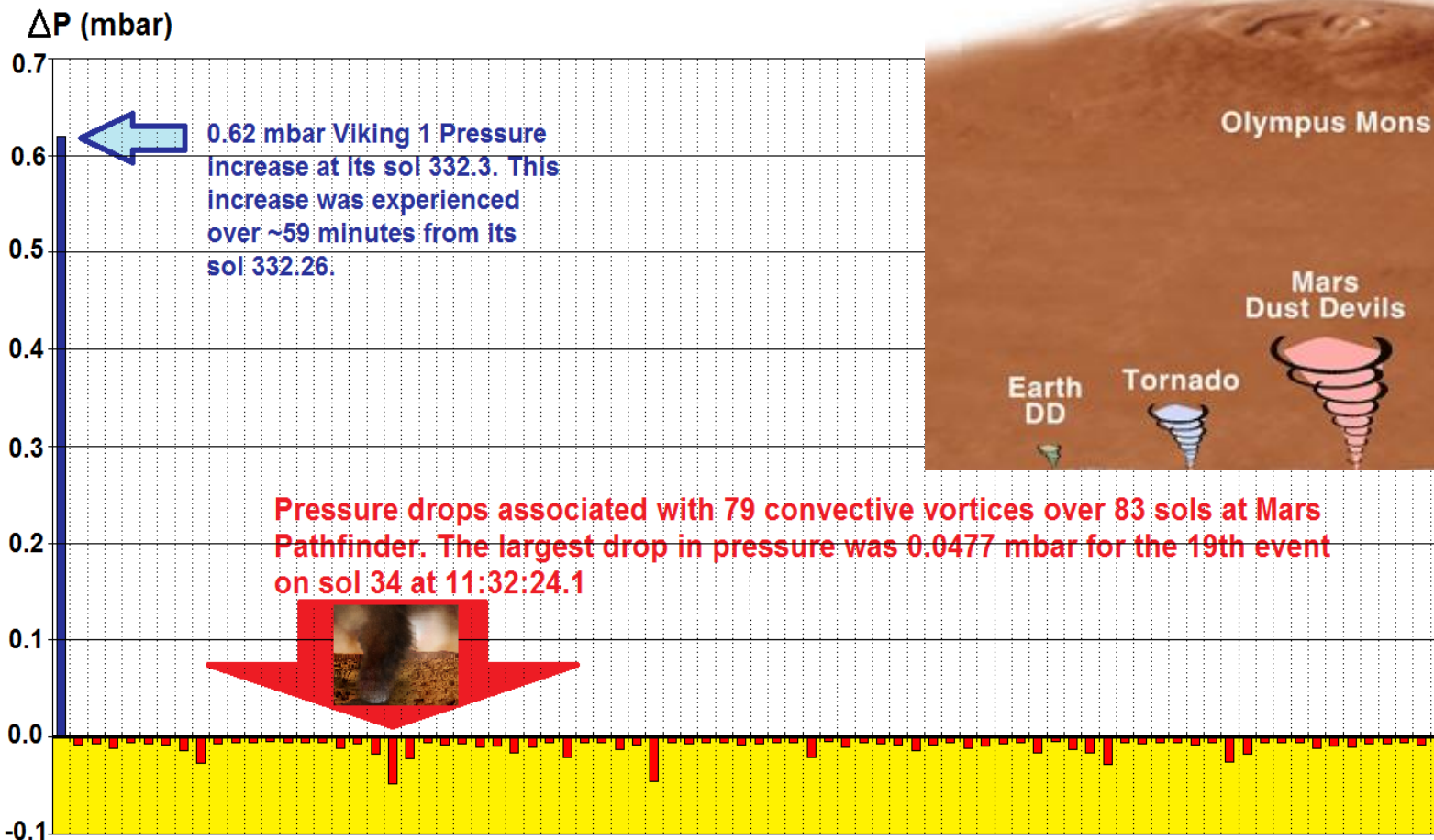


Similar dust particle size (a thousandth of a millimeter). But at 6.1 mbar pressure, an impossible 1,118 MPH wind is required to lift dust.

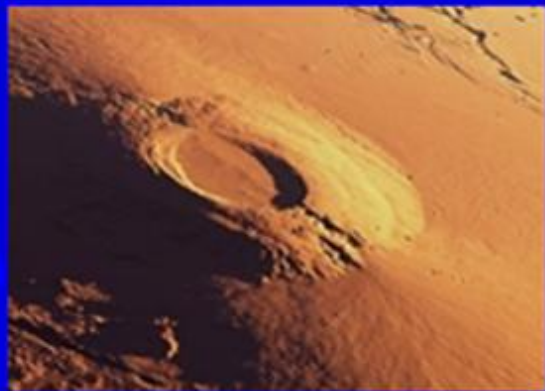


DUST DEVILS ARE THE MOST OBVIOUS WEATHER ANOMALY

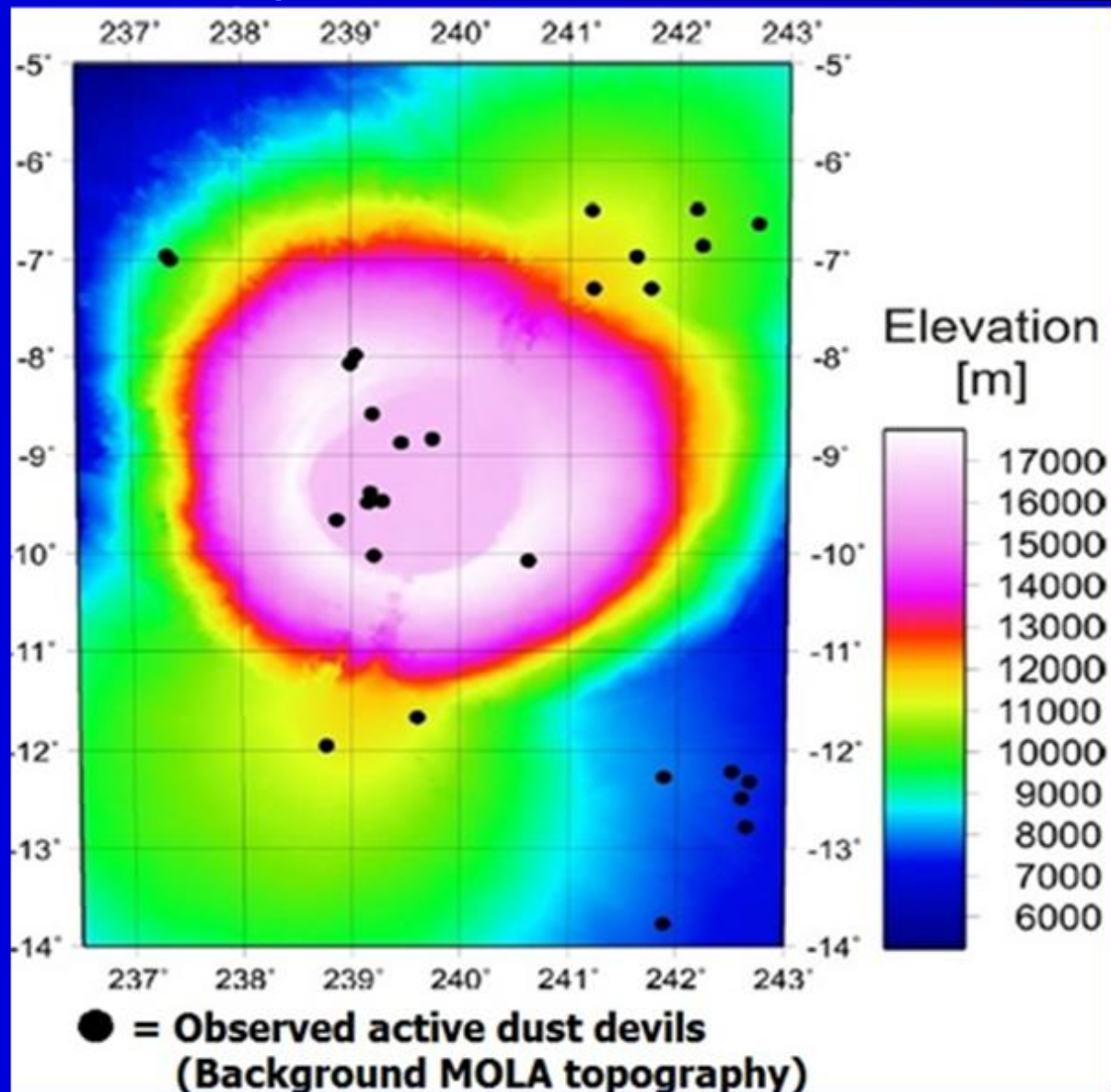
With so little air on Mars, how can there be enough change in pressure to form them at all?



Why Question Pressure?



Dust devils even form at a height of 10.6 miles (17 km) on the Arsia Mons mountain where pressure should only be 1/1000 th of Earth's pressure.



Why Question Pressure?

Dust storms increase air pressure and can block 99% of light on Mars (and Earth).



Mars_dust_opacities_MER-B_Sol_1205_to_1235.jpg (800 × 533 pixels, file size: 39 KB, MIME type: image/jpeg)

Phoenix, AZ Dust Storm of 5 July 2011

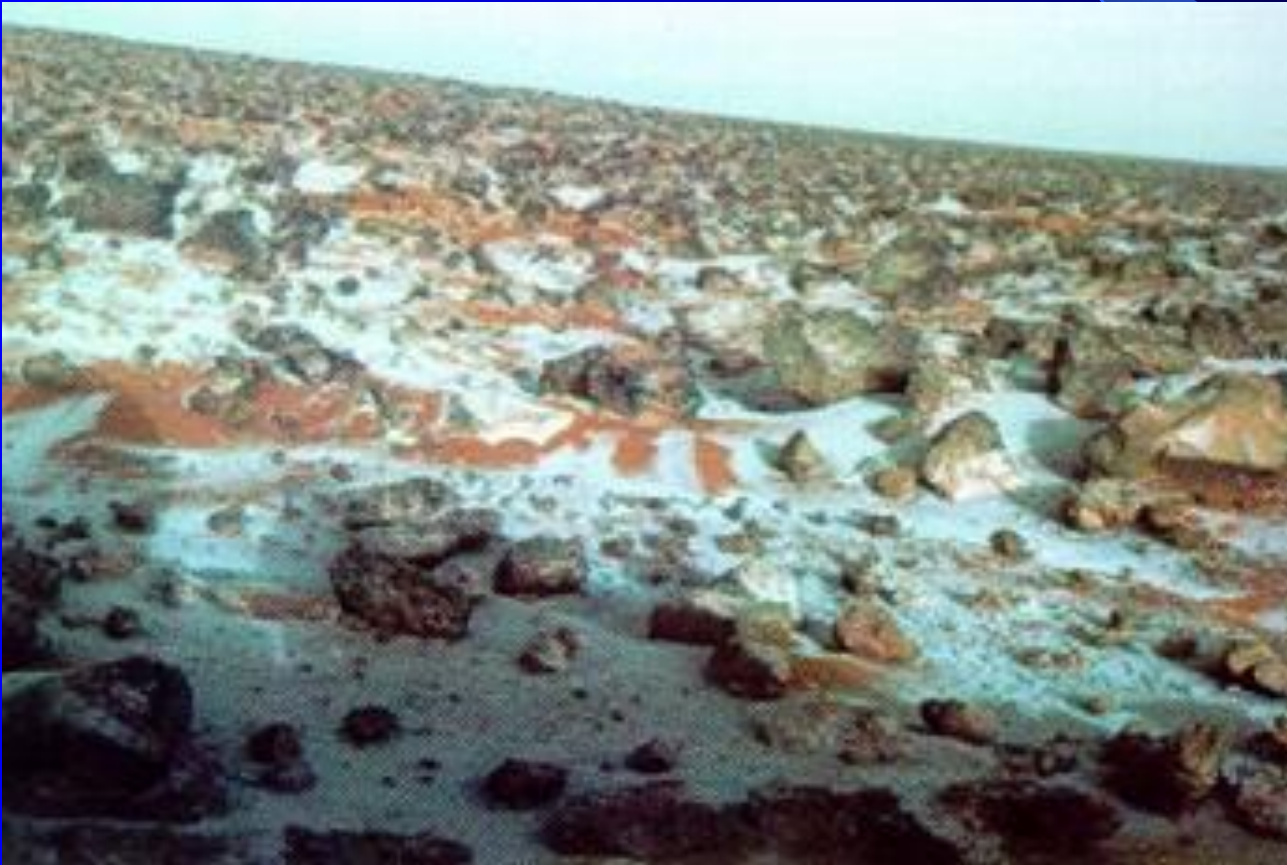
- Pressure increased by 6.6 mbar – that's more than average 6.1 mbar pressure on Mars.



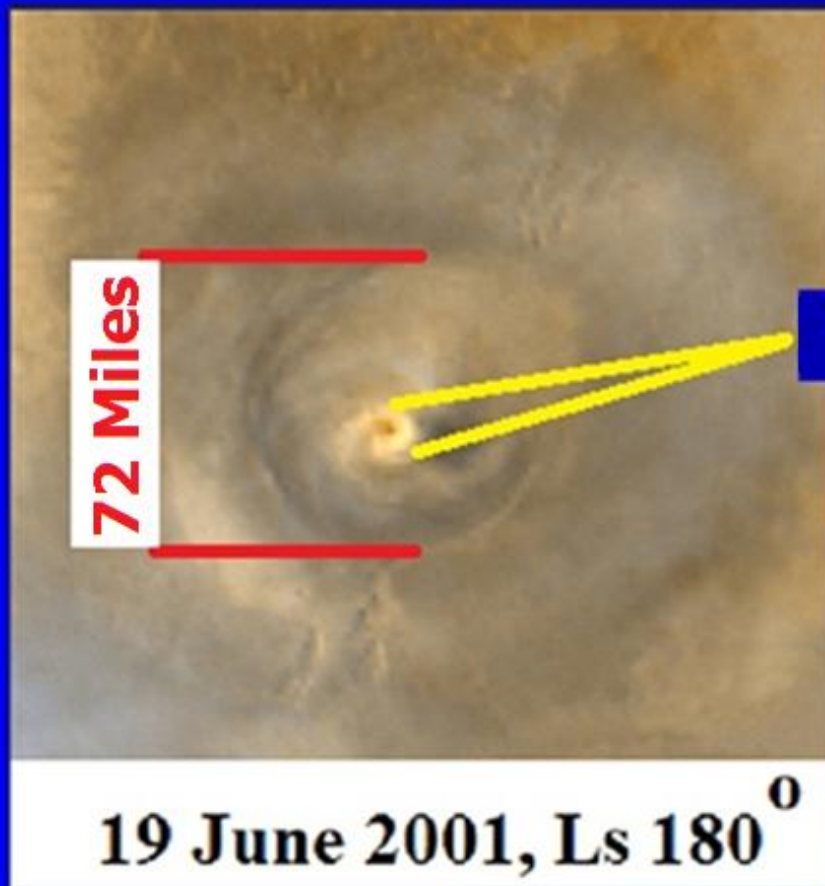
- Pressure measured on MSL was at least 9.25 mbar. That + 6.6 mbar = 15.85 mbar. **MSL can't even measure over 11.5 mbar.**

Why Question Pressure?

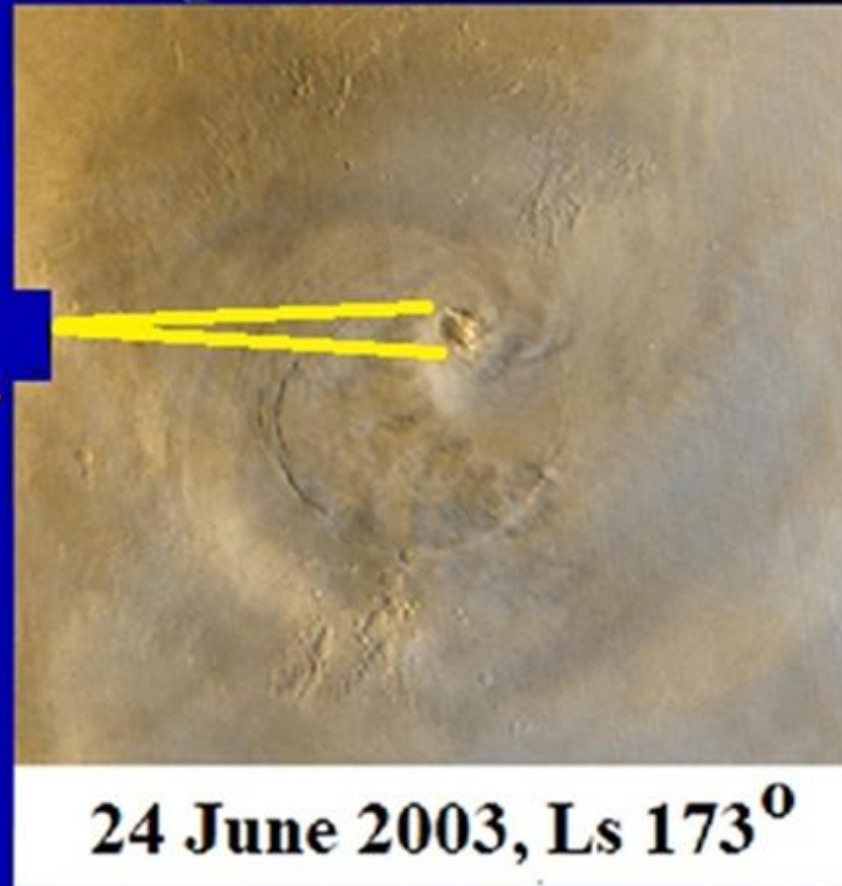
- Snow on Mars with ice particles in clouds ten times too small for accepted pressure.



Spiral Clouds on Arsia Mons look like Hurricane Eye Walls. 1 mbar NASA claim seems too low.



Eye
wall
~6.25
Miles



These clouds go up 18.75 miles above Arsia Mons. Believe NASA, and pressure there is only $\sim .07$ Mbar – too low to support such weather.

STRATUS CLOUDS 16 KM ABOVE MARS SUGGEST A PRESSURE AT AREOID OF 511 MBAR AND AT HELLIS BASIN HIGHER THAN PRESSURES ON EARTH AT SEA LEVEL.

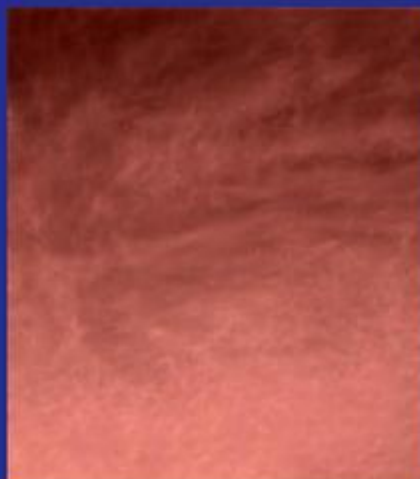
1. CIRROSTRATUS CLOUDS ARE FOUND ON EARTH UP TO 13,000 METERS HIGH.



Meteorology Calculator Version 1.5.9		
Pressure Altitude Required Data Entry		
Station Pressure	163.33	<input type="radio"/> in of Hg <input type="radio"/> mm of Hg <input checked="" type="radio"/> millibars (hPa)

2. PRESSURE AT 13,000 METERS IS ABOUT 163 MILLIBARS

Calculated Results	
Pressure Altitude Calculation	42651.1 ft
Pressure Altitude Calculation	13000 m



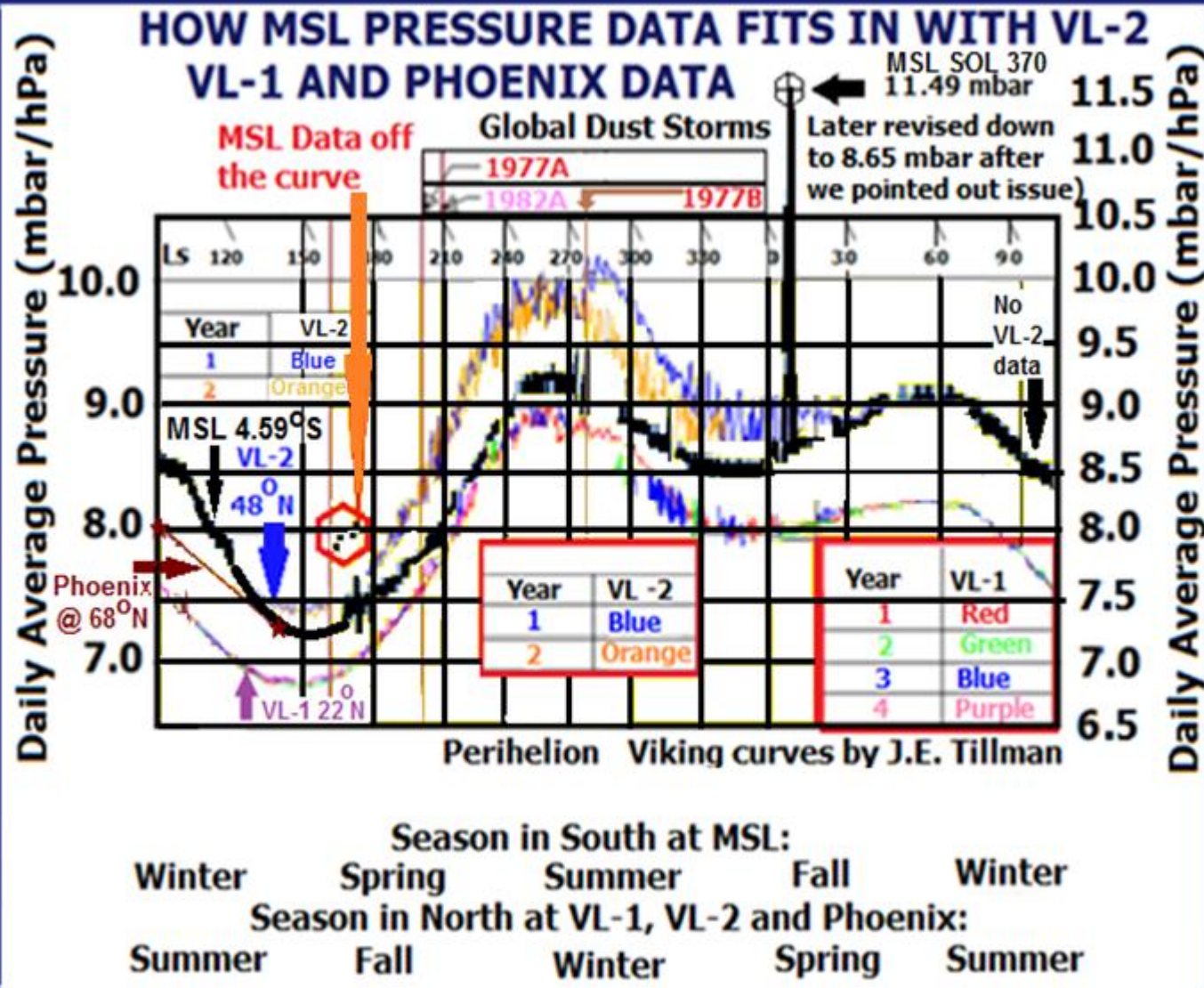
3. STRATUS CLOUDS ON MARS AT ALTITUDE OF 16,000 METERS ABOVE MARS PATHFINDER. PHOTO TAKEN 1 HOUR 40 MINUTES BEFORE SUNRISE ON 7/19/1997!

4. Pathfinder was 3,682 m below areoid. 16,000 m above that is 12,318 m. Table assumes stratus clouds cannot form at pressures lower than on Earth (163 mbar).



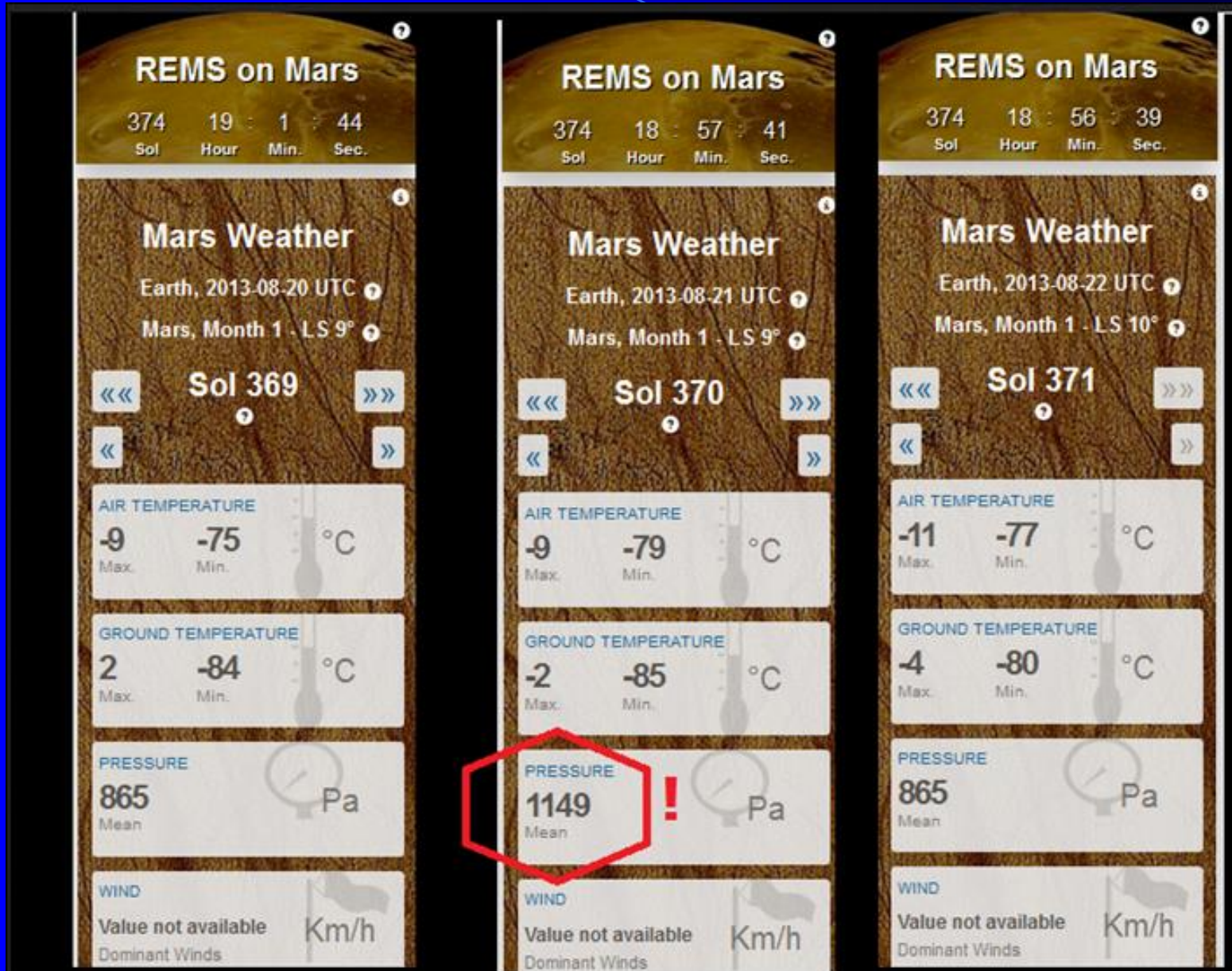
	A	B	C	D	E	F	G	H	I
1	CALCULATIONS BASED ON	ENTERING ARGUMENTS SCALE HEIGHT 10.8 KM AND 163.33 mbar at 12,318 meters							
2	MARS PATHFINDER	KILOMETERS	10.8km Scale	RATIO B/C	=-EXP(D VALUE)	1/E value	-F VALUE = PRESSURE	PERCENT OF	PRESSURE IN
3	VIEW OF STRATUS CLOUDS		Height (MARS)				MULTIPLE OF	PRESSURE AT	MILLIBARS
4							6.1 MBAR MEAN	MEAN AREOID	
5	CLOUDS 16 KM ABOVE MPF	12.318	10.8	1.140555556	-3.128505941	-0.319641394	0.319641394	31.96413939	163.3303595
6	MARS PATHFINDER (MPF)	-3.682	10.8	-0.340925926	-0.7111111581	-1.40624907	1.40624907	140.624907	718.56515
7	MEAN AREOID	0	10.8	0	-1	-1	1	100	510.98
8	VALLES MARINERIS	-5.31	10.8	-0.491666667	-0.611606201	-1.635039015	1.635039015	163.5039015	835.4722361
9	HELLAS BASIN	-7.825	10.8	-0.724537037	-0.484548845	-2.063775427	2.063775427	206.3775427	1054.547968

Often in 2012 and 2013 MSL pressures were well above the expected curve.



When we pointed them out to NASA, NASA dropped them back to the curve.

Example: On Sol 369 pressure was 865 Pascals. The next day a record high of 1149 Pa was recorded - the most the sensor could measure. I called JPL about it. The next day it was back to 865 Pa.

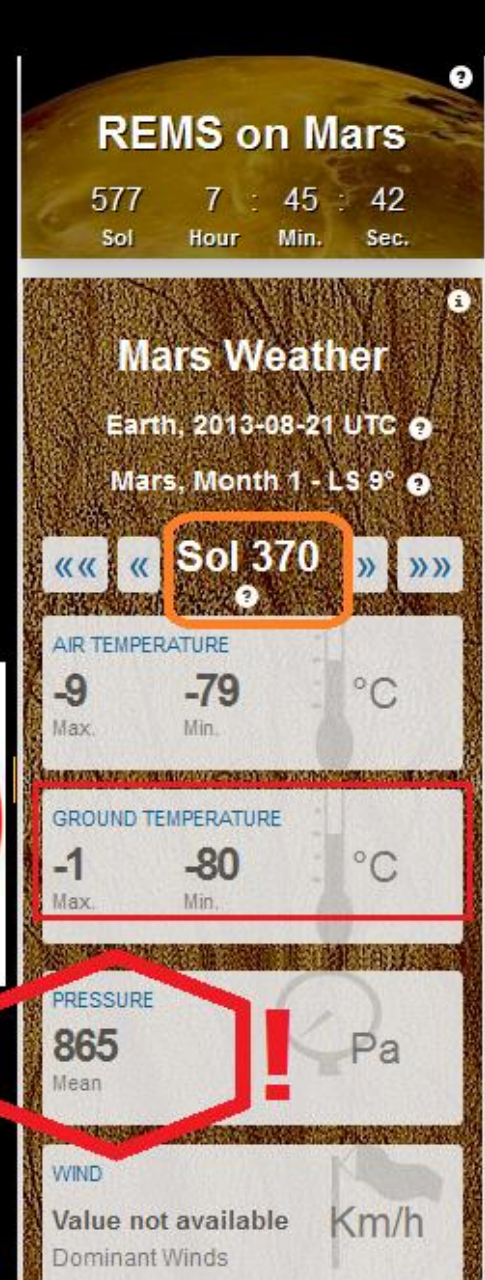


REMS Team/ NASA/JPL Critical Data changes After Hearing from the Roffman Mars Correct Team.

**Pressure reported
as 1149 Pa BEFORE
we brought it to
JPL's attention.**



**About 7 months after we
brought the 1149 Pa pressure to
JPL's attention, they changed it to
865 Pa!**



Mars Weather from REMS

Mars Weather from MSL REMS



Sol: 370



Daily Avg Data

Updated: 8/20/2013

-79°C

Min Air Temp

-9°C

Max Air Temp

11.49 hPa

Pressure



06:36

Sunrise

18:33

Sunset

April

Earth Equivalent Month

9°

Ls

Units

Data

Time

Español

Info

While the REMS Team/JPL changed 1149 Pa (11.49 hPa/mbar) to 865 Pa (8.65 hPa/mbar) to cover up the significant pegging out at maximum measurable pressure on Sol 370, as of 1/23/2015 Ashima Research still shows the original data.

Printscreen captured at 1:02 pm on 1/23/2015



1:02 PM
1/23/2015

Viking pressure spikes at 6:30 to 7:30 am were evidence for internal (heater-related) processes at work. This means they were not measuring outside air pressure!

VIKING 1 PRESSURE CHANGES ON ITS 305TH TO 350TH DAYS

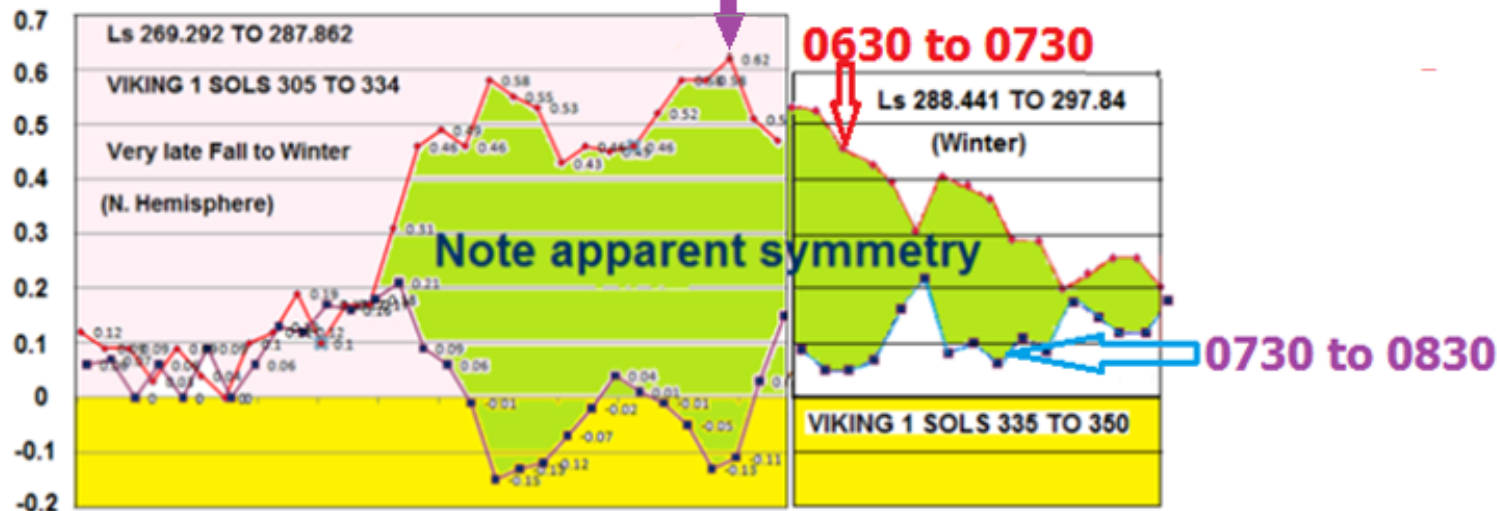
PRESSURE
CHANGE MBAR



PRESSURE CHANGE 6:30 AM TO 7:30 AM MARS TIME


PRESSURE CHANGE 7:30 AM TO 8:30 AM MARS TIME

0.62 MBAR INCREASE



Viking Pressures & Outside Temperature

Pressure varied inversely with outside temperature. This suggests heating of the gas behind a dust clot that isolated the pressure sensor from Martian air.

 <http://www.1728.com/gaspres.htm>

VIKING 1 YEAR 1

solve for:

$$\frac{P_1}{T_1} = \frac{P_2}{T_2}$$

Temperature 1 Equals >> VL1 SOL 292.96, Ls 260.849

Temperature 2 Equals >> VL1 SOL 102.5, Ls 146.385

Pressure 1 Equals >> VL1 SOL 110.66 (and others), Ls 150.662

Pressure 2 Equals >>>>

ACTUAL VL1 MAX PRESSURE = 9.57 MBAR
AT SOL 318.34, Ls 277.724 (98.19% OF PREDICTED VALUE)

Note: 177.19 K = -137.128° F
255.77 K = +0.716° F

TINY DUST FILTERS HAD NO CLEANING MECHANISM

Mars is very dusty. All dust filters likely clogged immediately on landing.



DIME SURFACE
AREA = $\sim 251.9 \text{ mm}^2$



TAVIS DUST FILTER FOR VIKING = $\sim 40 \text{ mm}^2$ ●

TAVIS DUST FILTER FOR PATHFINDER = $\sim 3.14 \text{ mm}^2$ ●

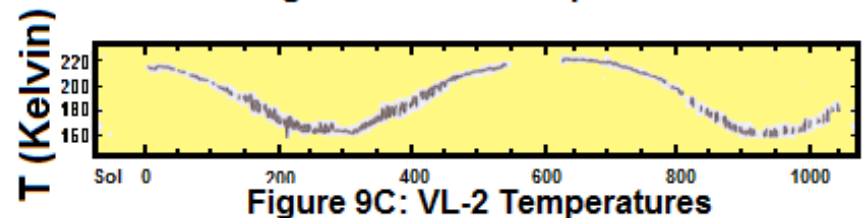
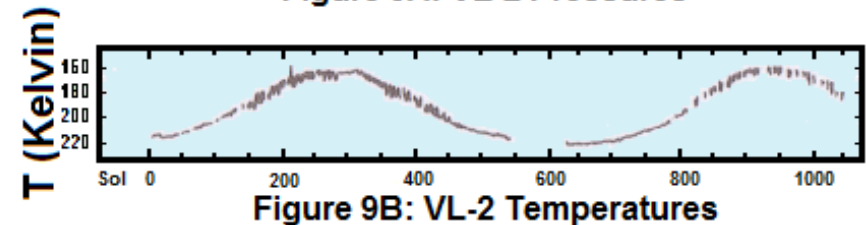
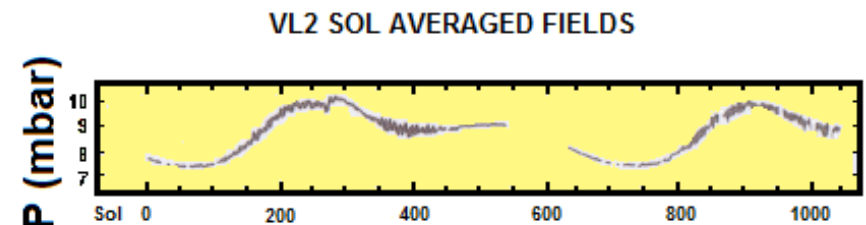
VAISALA DUST FILTER FOR PHOENIX OR MSL = $\sim 10 \text{ mm}^2$ ●

Evidence for clogged dust filters: Viking pressure data for over a Martian year

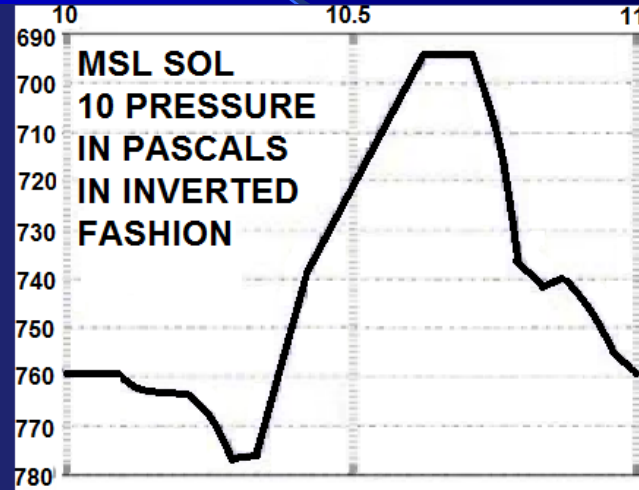
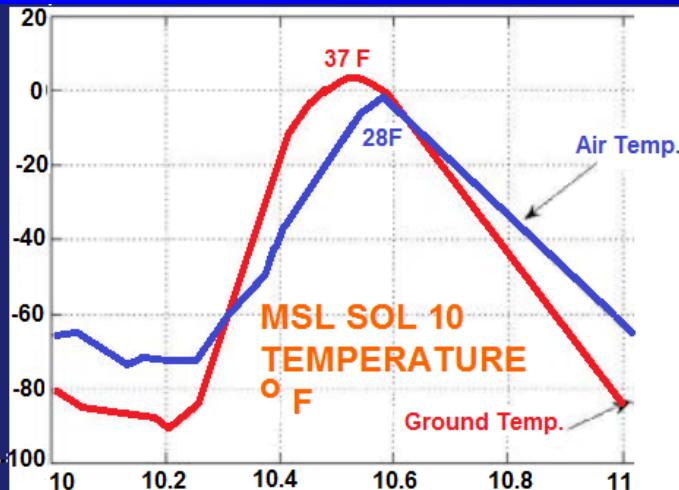
Figures 9A and 9C show that as temperature fell pressure recorded rose.

Figure 9B is 9C inverted to show quality of pressure and temperature link.

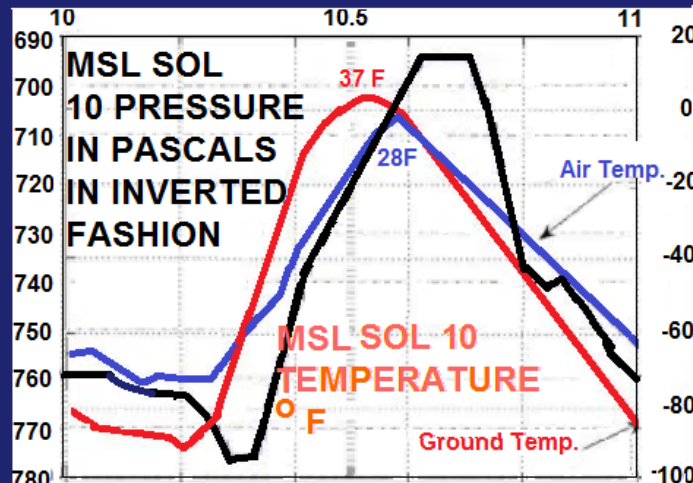
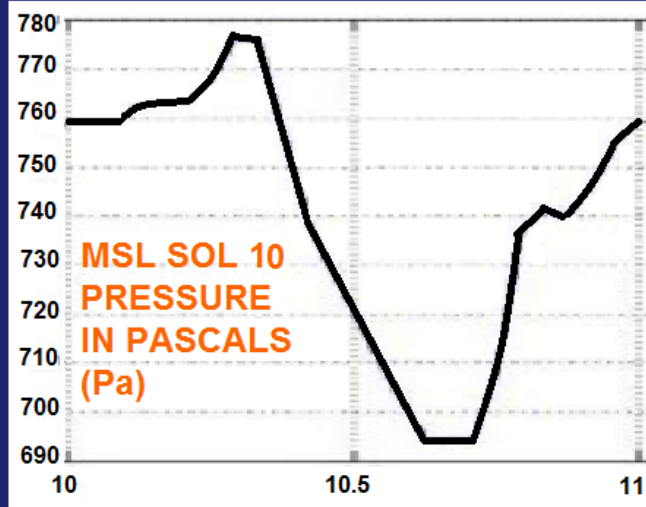
Hypothesis: Above annual trend will be matched at the hourly level when RTG heaters are on & increasing pressure behind a dust clot.



Initial MSL daily pressure also varied inversely with outside temperature. This reinforces the dust clot idea.



ARE DAILY PRESSURE CYCLES RELATED TO THE INVERSE OF TEMPERATURES OUTSIDE THE MSL AS WITH VIKINGS?



Occam's Razor



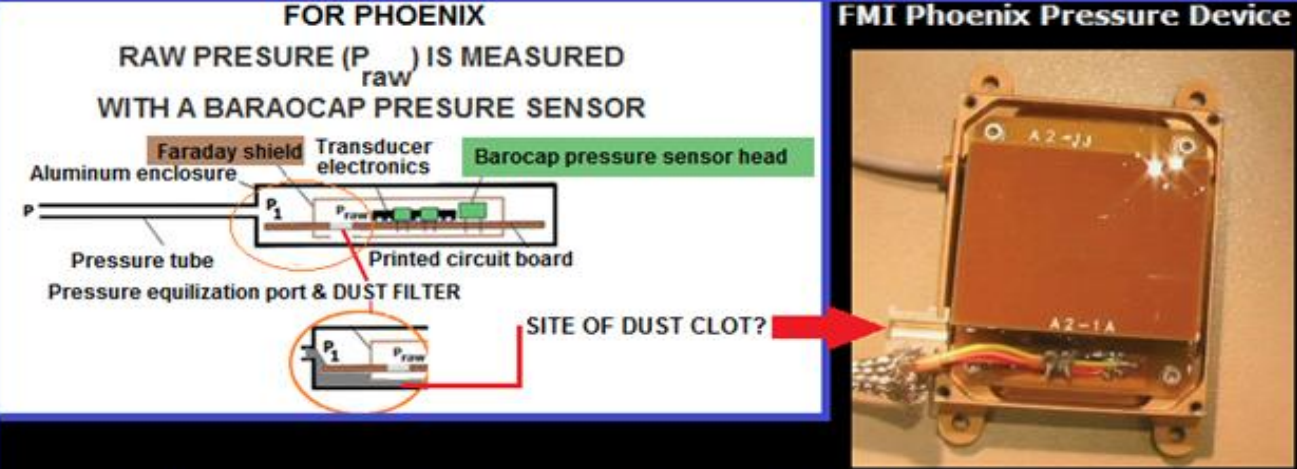
The simplest solution is usually correct.

This suggests repeatable pressure data should be believed. But, consistent pressures measured by all landers may only exist because they all had pressure sensor air access tubes clog in similar fashion (or because, as was just shown, the data has been altered).

FMI knew it had a problem with Phoenix


FOR PHOENIX

RAW PRESURE (P_{raw}) IS MEASURED
WITH A BAROACAP PRESURE SENSOR

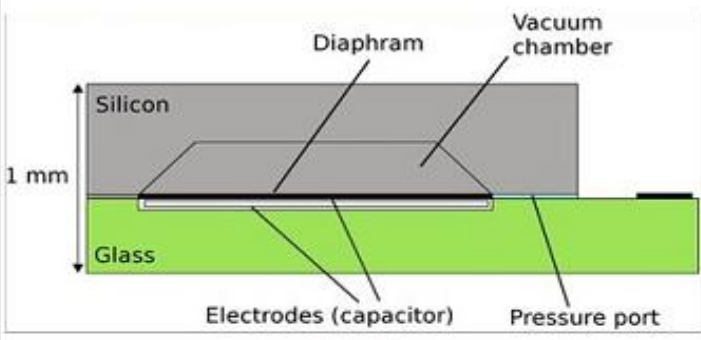


Pressure device is small and light weighted pressure sensing instrument. The main dimensions of the device are approximately 55x45x20 mm and the weight is less than 30 grams.

MSL Vaisala Transducer



Credit: FMI



In 2009 they wrote, ***"We should find out how the pressure tube is mounted in the spacecraft and if there are additional filters etc."*** FMI designed the sensor.

KENRIK KAHANPÄÄ: MAN AT THE CENTER OF PHOENIX AND MSL PRESSURE CONTROVERSY

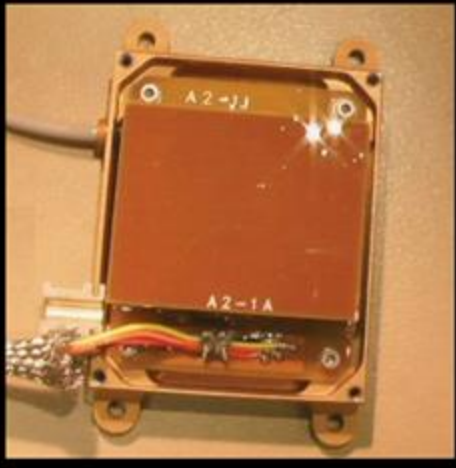
*"That we at FMI did not know how our sensor was mounted in the spacecraft and how many filters there were shows that **the exchange of information between NASA and the foreign subcontractors did not work optimally in this mission!**"*

(Kahanpää [FMI]
Personal communication,
December 15, 2009)



Henrik Kahanpää and REMS- Pressure measuring device. Photo: Jouni Polkko / Finnish Meteorological Institute





International Traffic in Arms Regulations (ITAR)

- *"After Phoenix landed... the actual thermal environment was worse than the expected worse case... **Information on re-location of the heat source had not been provided due to ITAR restrictions.**"* (Taylor, P.A., et al, 2009)



Red boxes show pressures each day that were within 2% of our predictions based a formula that presumed dust clots. 0.3 = 6:30 am to 7:30 am



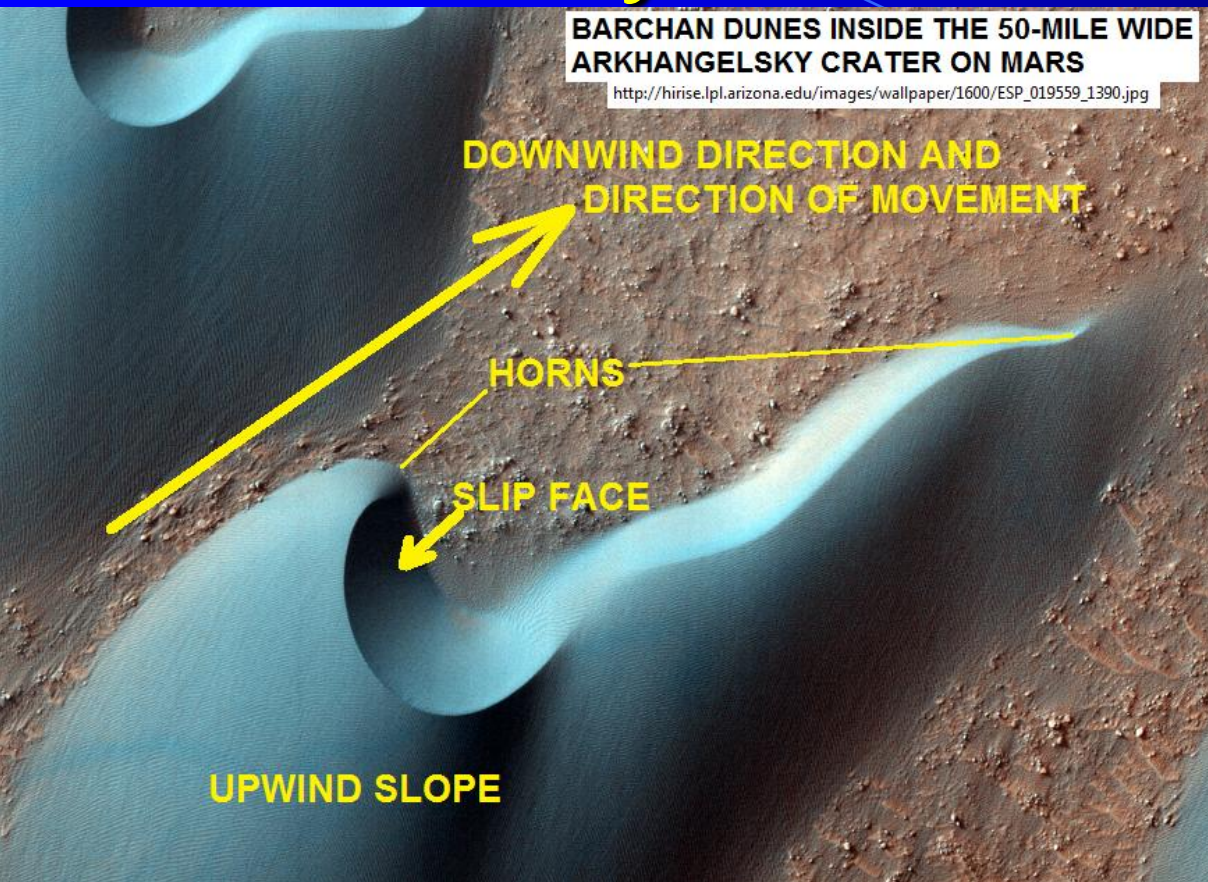
VL1 SOL	0.02	0.06	0.1	0.14	0.18	0.22	0.26	0.3	0.34	0.38	0.42	0.46	0.5	0.54	0.58	0.62	0.66	0.7	0.74	0.78	0.82	0.86	0.9	0.94	0.98	VL1 SOL								
228	198							194									215			204							228							
229								196	199	BLOCKS IN RED ARE WITHIN 2% OF PREDICTIONS BASED ON GAY-LUSSAC/AMONTON'S GAS LAWS. FORMULA USED IS $P = \frac{6.51 \text{ mbar} \times 255.17 \text{ K}}{T \text{ Measured in cell K}}$								215	210	204				200	199	202	229							
230								192	197																209	204	201	198	196	198	199	198	230	
231	196							192	196																210	206	202	200						231
232								193	199																209		203	200				197	199	232
233								193	199									211		203	200	198	198	200	198	233								
234	197							193	199									211		304	201	200				234								
235								195	201									211	205	203	201	198	196	197	198	235								
236	195							191	197									213	207	203	200	197	197	195	198	236								
237	198	197						192										212	207	204	201	198	198	200		237								
238	195	193					193	192	192										206	203	200	197	197	196	194	238								
239	195	196						192										213	205	203	200	197	195	196	196	239								
240	197	193						190										209	205	202	198	195	194	194	193	240								
241	195	195						189												203	200	197	195	195	197	241								
242	196	194						191											206			197	196			242								
243	194	191						190											206			197	195	197		243								
244	197	197						191											206	203	200	197	197	196	195	244								
245	196	196	195					192	28K Temperature range for accurate pressure predictions this page (185 to 213K)											199	197	194	192	191		245								
246	190	189					186	189																						195	193			246
247		193	189				187	189																					198	196	194	192	190	247
248	192	194	192					189																		208			199	196	195	194	192	248
249	193	194	191					189																193	192	191	249							
250	190	189	187				185	187													197	194			194	250								

BLOCKS IN RED ARE
WITHIN 2% OF
PREDICTIONS
BASED ON GAY-
LUSSAC/AMONTON'S
GAS LAWS.

FORMULA USED IS
 $P = 6.51 \text{ mbar} \cdot \frac{255.17 \text{ K}}{T}$
T Measured in cell
K

28K Temperature
range for accurate
pressure predictions this
page (185 to 213K)

Why Trash Occam?



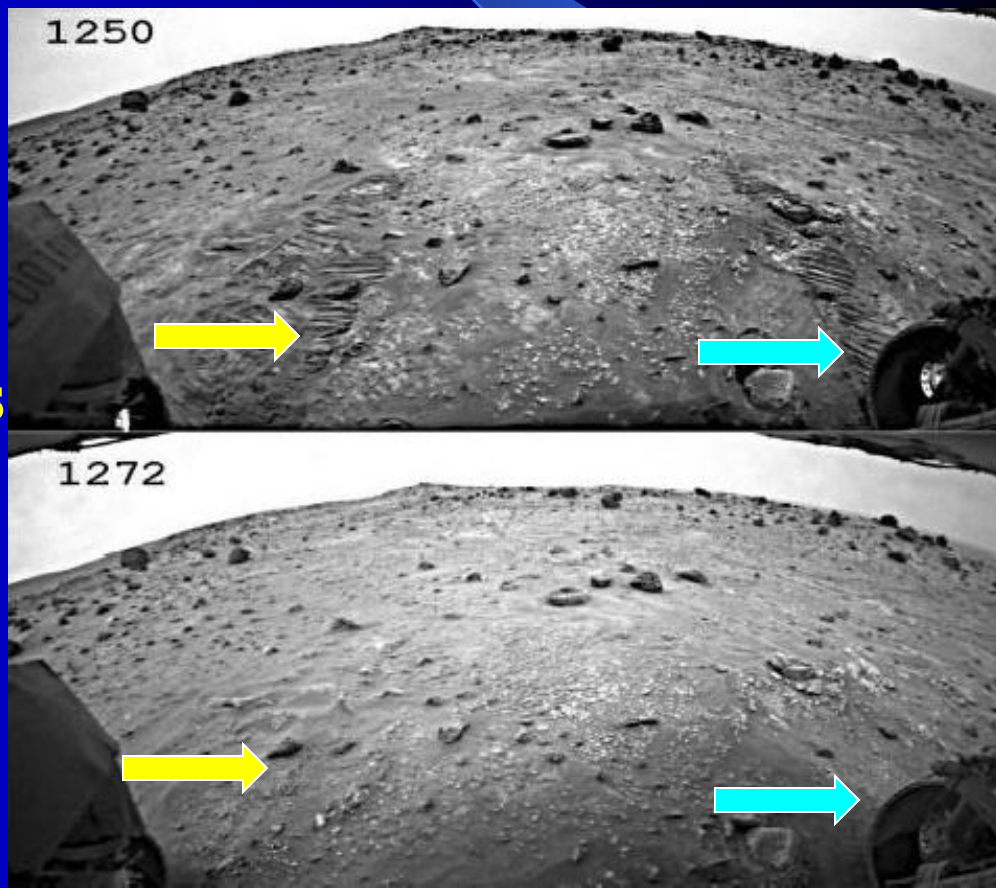
**Hard to explain sand dune features,
especially in Martian craters if
pressure is as low as advertised.**

Why Trash Occam?

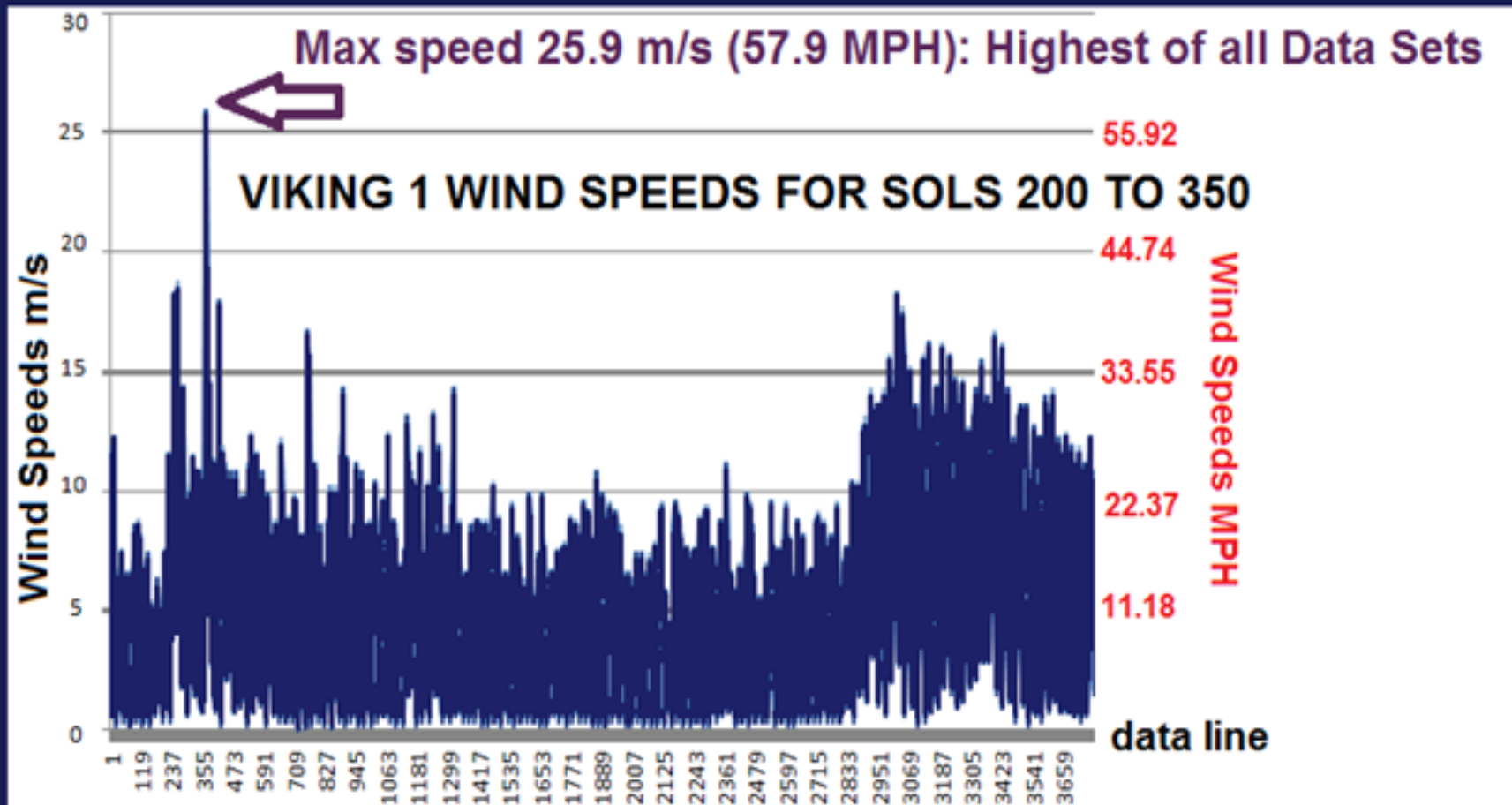
- Wind-tunnel trials show a patch of sand would take wind 80 mph to move on Mars (vs. 10 mph on Earth). No lander ever saw wind so high on Mars.

JPL: Spirit rover detected shifting sand in 2004.

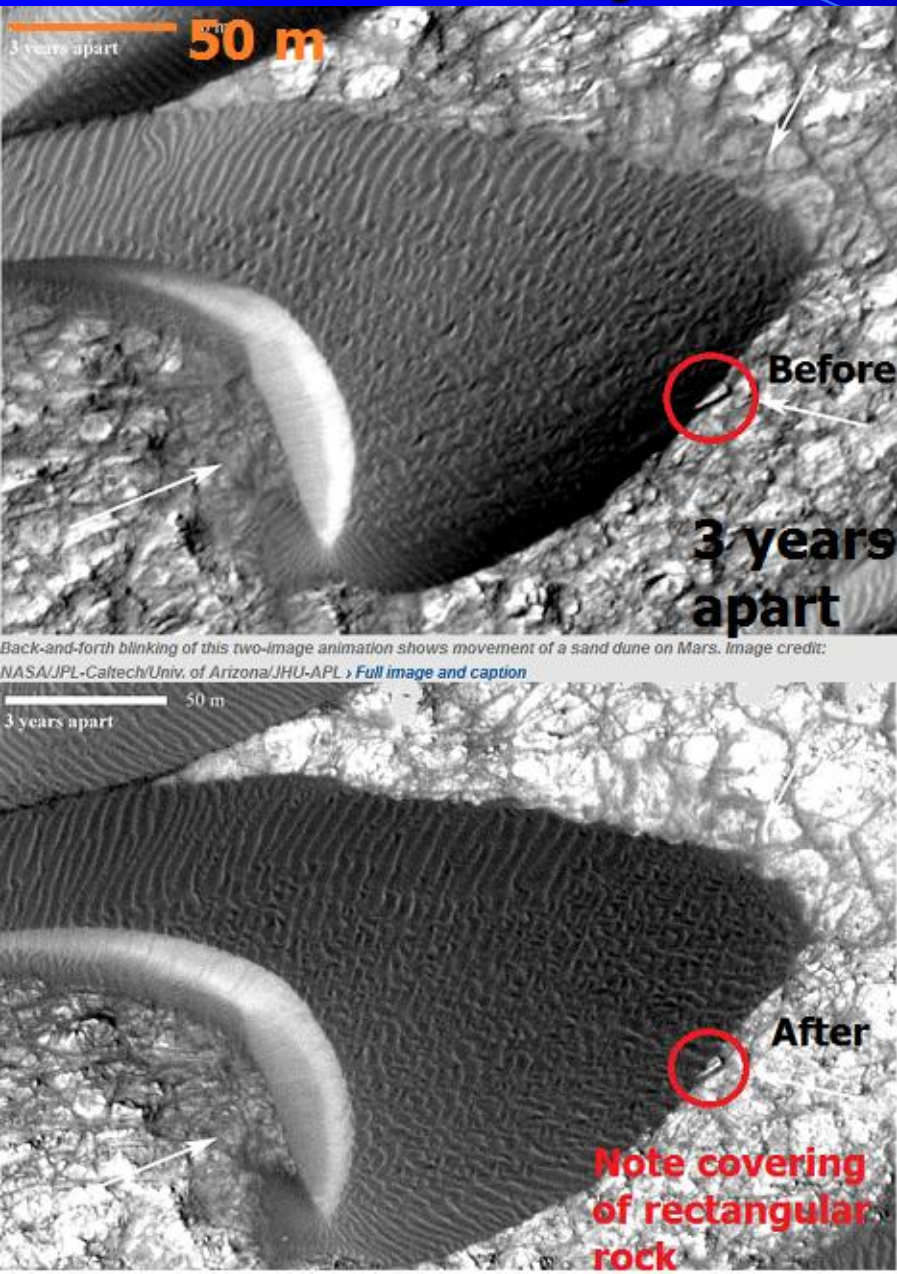
- **Grains of sand dotting the rovers' solar panels**
- **Rovers' track marks filling in with sand.**



Viking wind never reached 80 mph needed to move sand at low pressure. Highest wind? 57.9 mph. As sand does move, pressure MUST be higher.



Why Trash Occam?



"Mars either has more gusts of wind than we knew about before, or the winds are capable of transporting more sand."

**Nathan Bridges,
Planetary scientist, Johns Hopkins
University's Applied Physics Laboratory**

http://www.nasa.gov/mission_pages/MRO/multimedia/pia15295.html

Data Reporting Fiasco

REMS Reported 6 Days of Earth-like Pressure

PRESSURE REPORTED INCREASED 100 FOLD

Aug 29, 2012



Sol 23
Sunny

WRONG MONTH

End of month 3

Aug 29, 2012 on Earth

Temperature
(min / max) 0 °C
-73 °C

Average
Pressure 7.4 hPa
Lower than nominal

Average
Atm Humidity XX %

Dominant Winds

Blowing from the E
at 2 m/s

REMS

2012 Centro de Astrobiologia (CAB)



**DID MSL LAND AT GALE ON MARS
OR VAIL IN COLORADO?**

Pressure like Earth
at 8,192.6 feet
above sea level.

Sept. 5, 2012



Sol 29
Sunny

Right month

Month 6

Sept. 5, 2012 on Earth

Temperature
(min / max) -2 °C
-75 °C

Average
Pressure 747 hPa
Higher than nominal

Average
Rel. Humidity -- %

Dominant Winds

Blowing from the E
at 2 m/s

REMS

100 Pa = 1 hPa = 1 Mbar.

Sol 29 was first
given as 747 hPa,
while Sol 30 was
given as 747 Pa
(7.47 hPa) after
questions by us
and others

PRESSURE 1% OF YESTERDAY'S REPORT



Sol 30
Sunny

Month 6

Sept. 6, 2012 on Earth

Temperature
(min / max) -3 °C
-74 °C

Average
Pressure 747 Pa
Higher than nominal

Average
Rel. Humidity -- %

Dominant Winds

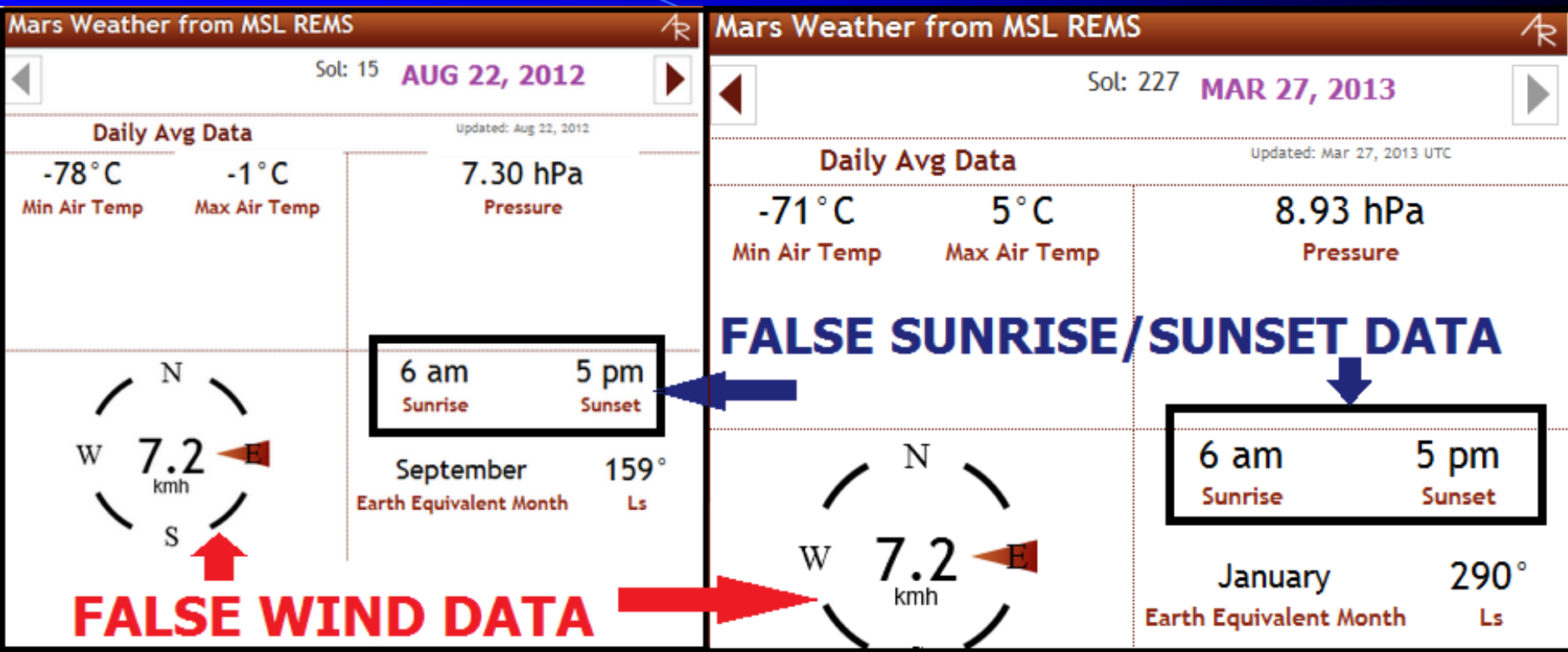
Blowing from the E
at 2 m/s

REMS

**DAILY WEATHER NEVER
INCLUDES RELATIVE HUMIDITY**

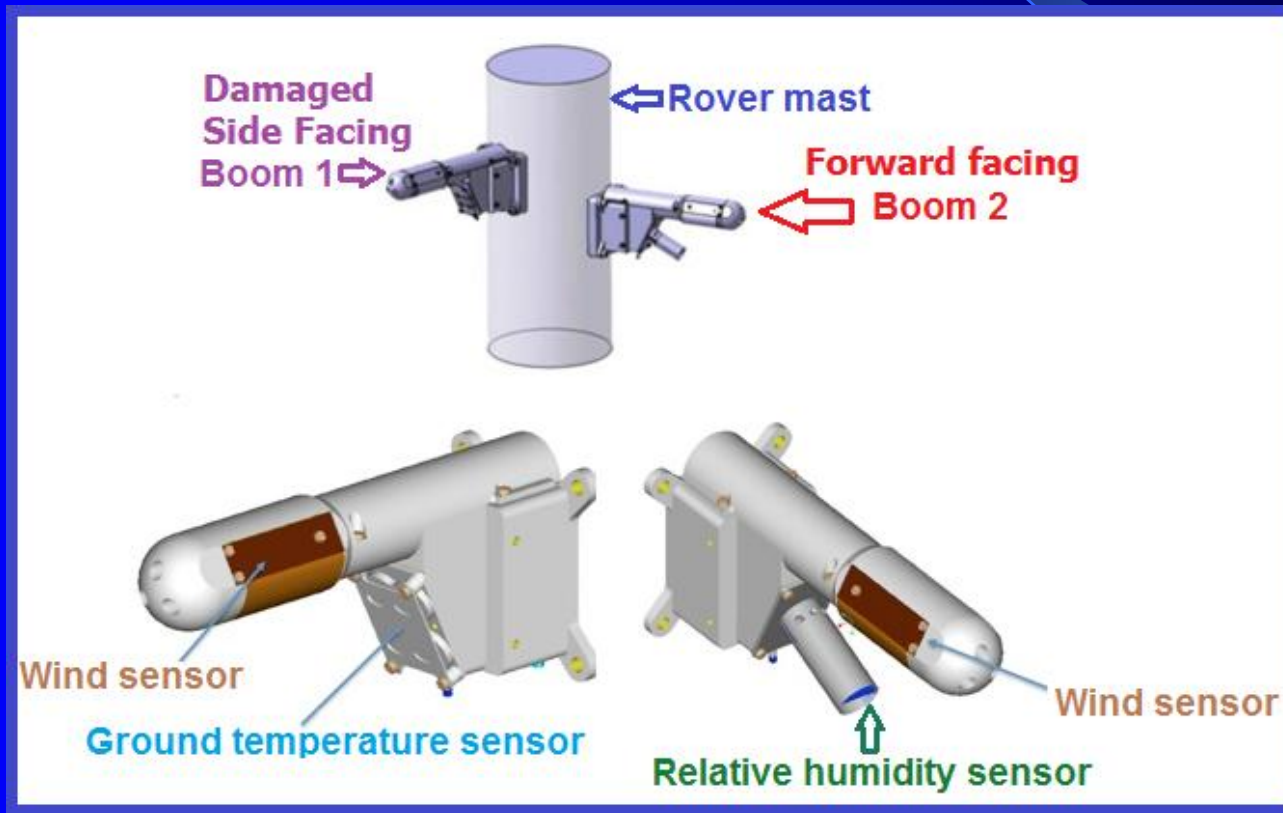
**ALL WINDS (2 M/S) REPORTED
← WRONG UNTIL MAY 2013**

Data Reporting Fiasco



From August 22, 2012 until April 2, 2013 ALL wind data published by REMS and Ashima Research was wrong. All sunset/sunrise times were also wrong.

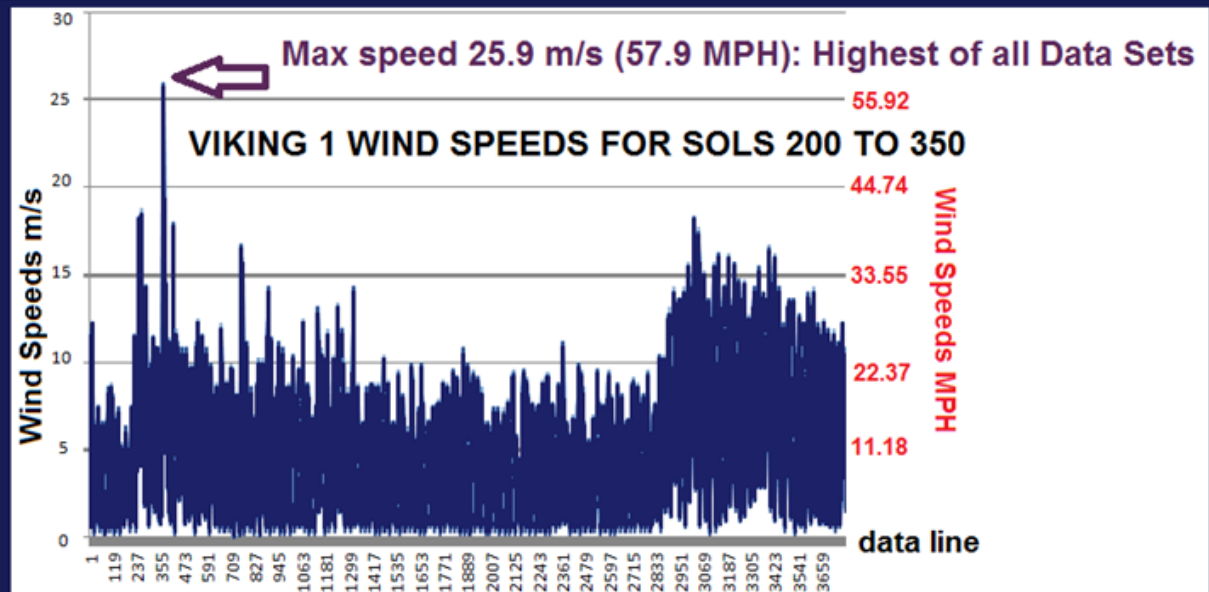
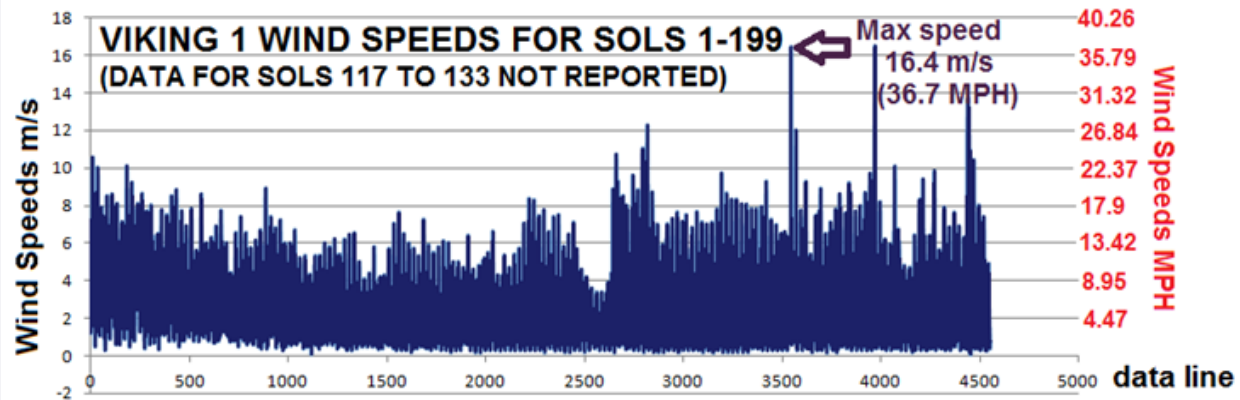
One of the REMS Booms broke on Landing. It would have been more honest to list winds as *Not Available*.



We know from the Vikings that there is an enormous amount of variation in winds.

VL-1 SOL	LS	Wind direction	Wind Speed M/S	Wind Speed MPH
214.38	210.621	290	1.2	2.68
214.42	210.646	249	2.6	5.82
214.46	210.671	254	4.6	10.29
214.5	210.696	283	7.6	17.00
214.54	210.721	305	9.4	21.03
214.58	210.746	331	19.9	44.52
214.62	210.771	343	22.5	50.33
214.66	210.796	356	22.6	50.55
214.7	210.821	6	21.2	47.42
214.74	210.847	19	17.8	39.82
214.78	210.872	19	25.9	57.94
214.82	210.897	24	25.2	56.37
214.86	210.922	25	18.8	42.05
214.9	210.947	29	13.8	30.87
214.94	210.972	33	9.2	20.58
214.98	210.997	355	4.9	10.96

Profile of the windiest Viking day on Mars with the greatest wind gust recorded at VL-1 sol 214.78.



Mistakes were published that raised concerns about basic competence.

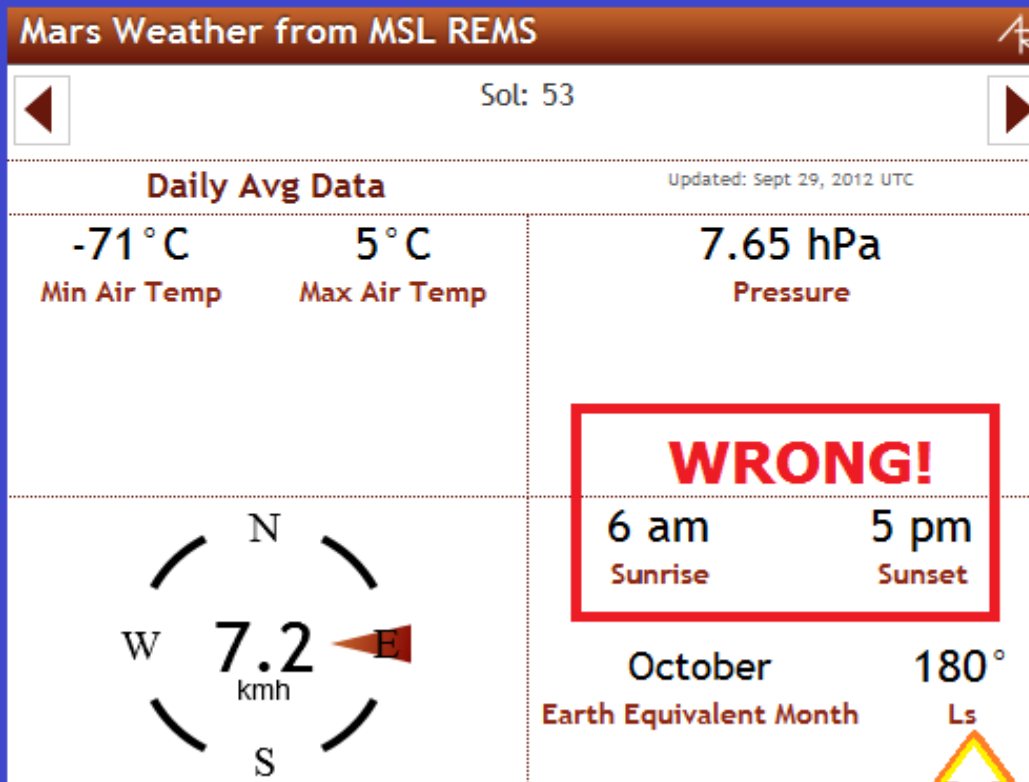
37

TILT OF EARTH'S
AXIS = 23.44°

MARS CURIOSITY LATITUDE AT GALE CRATER
 4.59° S

TILT OF MARTIAN
AXIS = 25.19°

SUNRISE AND SUNSET TIMES FOR MARS TIMES
SHOULD VARY IN A MANNER SIMILAR TO JAKARTA.



This is how sunrise and sunset
time vary at cities with similar
latitudes on Earth (12/26/2012)

JAKARTA, INDONESIA
LATITUDE: 6.1333° S

Date	Sunrise	Sunset	Length	Change
FEB 16, 2013	05:58	18:12	12:14	
+1 day	05:58	18:12	12:14	00:00 equal length
+1 week	05:58	18:10	12:12	00:02 shorter
+2 weeks	05:58	18:07	12:09	00:05 shorter
+1 month	05:56	17:59	12:03	00:11 shorter
+2 months	05:53	17:47	11:54	00:20 shorter
+3 months	05:56	17:44	11:48	00:26 shorter
+6 months	05:55	17:53	11:58	00:16 shorter

EQUINOX



We notified JPL that there could not be only 11 hours of daylight at MSL. Finally David Roffman did the math. There is as much as 12 hours 19 minutes of daylight and little as 11 hours 43 minutes. NASA accepted the fix.

	A	B	C	D	E	F	G	H	I
1	λ_{sun}	Latitude			Day Length =	Daylight	Half Sol	difference	DAVID'S
2	(0 for spring	(phi)	$\delta_{\text{degrees}} =$	$H = \arccos((\sin(-.17) - \sin(lw) \cdot \sin(\delta)) / (\cos(lw) \cdot \cos(\delta)))$	$2 \cdot 1.027491 \cdot H / 360$	In Hours	in Hours	Half day -	Mars
3	in northern		$\arcsin((\sin(25.19) \cdot \sin(\lambda_{\text{sun}}))$			David's		Daylight	Daylight
4	hemisphere)					Calculation		(G-F)	Hours
5	(Ls)					(=E value * 24)			
6	0	-4.59	0	90.17054697	0.51471903	12.35325673	12.3299	0.0233617	12:01.4
7	150	-4.59	12.28711642	89.17267137	0.509022874	12.21654897	12.3299	-0.113346	11:53.2
8	180	-4.59	2.98768E-15	90.17054697	0.51471903	12.35325673	12.3299	0.0233617	12:01.4
9	210	-4.59	-12.28711642	91.17647243	0.520461138	12.49106731	12.3299	0.1611723	12:09.7
10	240	-4.59	-21.62923453	92.00779835	0.525206582	12.60495796	12.3299	0.275063	12:16.5
11	270	-4.59	-25.19	92.35267298	0.527175224	12.65220537	12.3299	0.3223104	12:19.3
12	300	-4.59	-21.62923453	92.00779835	0.525206582	12.60495796	12.3299	0.275063	12:16.5
13	330	-4.59	-12.28711642	91.17647243	0.520461138	12.49106731	12.3299	0.1611723	12:09.7
14	0	-4.59	0	90.17054697	0.51471903	12.35325673	12.3299	0.0233617	12:01.4
15	30	-4.59	12.28711642	89.17267137	0.509022874	12.21654897	12.3299	-0.113346	11:53.0
16	60	-4.59	21.62923453	88.35931782	0.504380021	12.10512051	12.3299	-0.2247745	11:46.5
17	90	-4.59	25.19	88.02453664	0.502468995	12.05925589	12.3299	-0.2706391	11:43.8
18	120	-4.59	21.62923453	88.35931782	0.504380021	12.10512051	12.3299	-0.2247745	11:46.5

There is never a day at MSL with only 11 hours of daylight and with 13 hours of darkness.

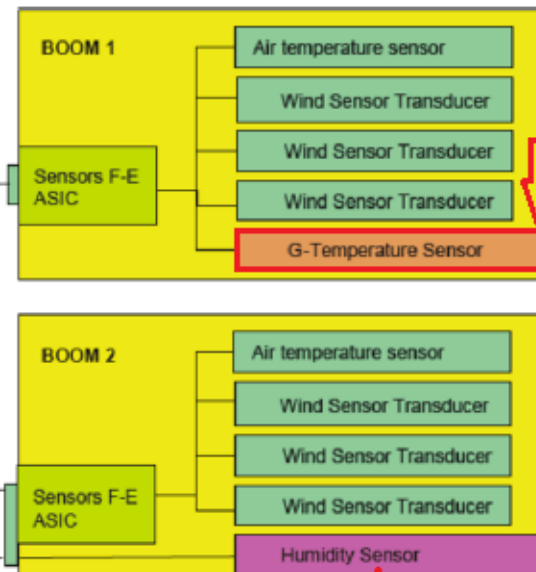
Best estimate of the length of daylight at MSL (4.59 South on Mars)



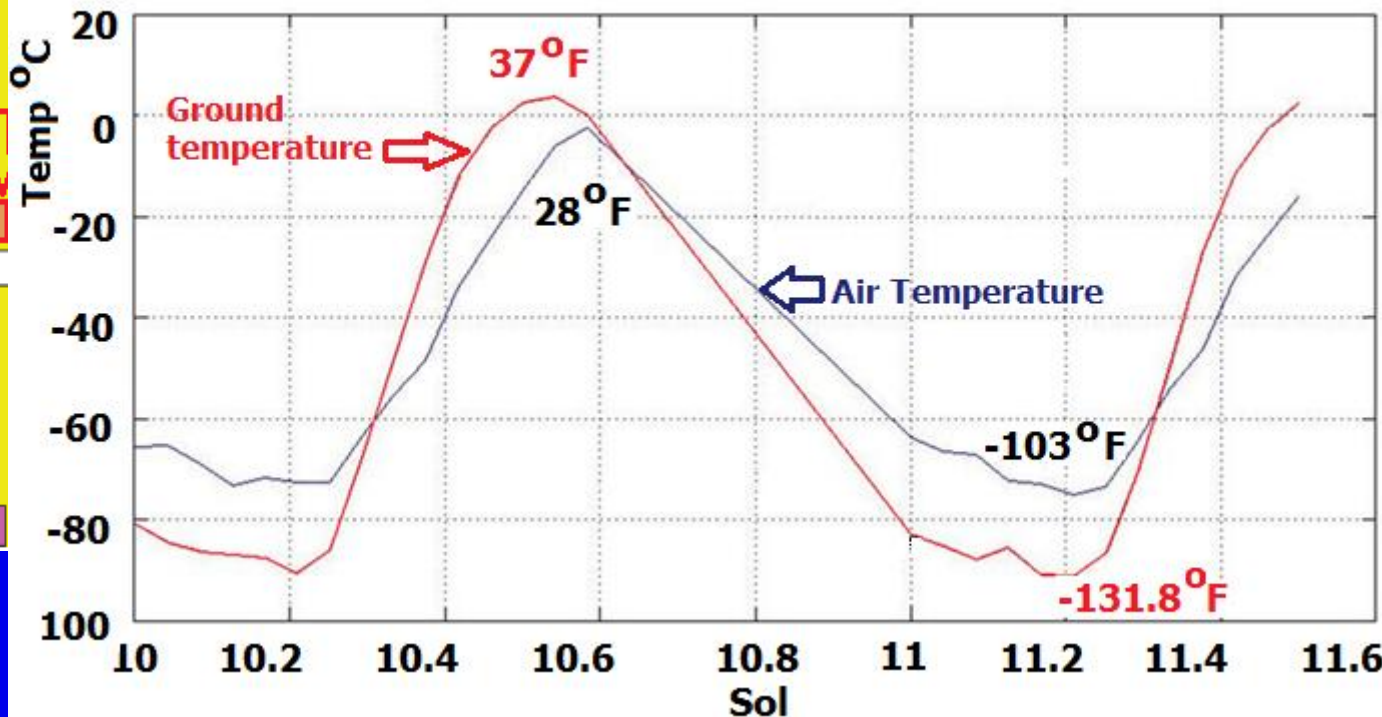
BOGUS GROUND TEMPERATURES?

Boom 1 broke. It alone measures ground temperature but with accuracy of only 18 Fahrenheit.

REMS Block Diagram



GROUND AND AIR TEMPERATURE SENSOR



Guy Webster (JPL) claims: "Damage on landing did not include the Infrared sensor that provides ground-temp information." But an accuracy of 18 degrees Fahrenheit is almost worthless.

But the weak ground temperature answer did not address altered air temperatures. Who is killing warm days on Mars, and why?

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

REMS Relative Humidity Sensor

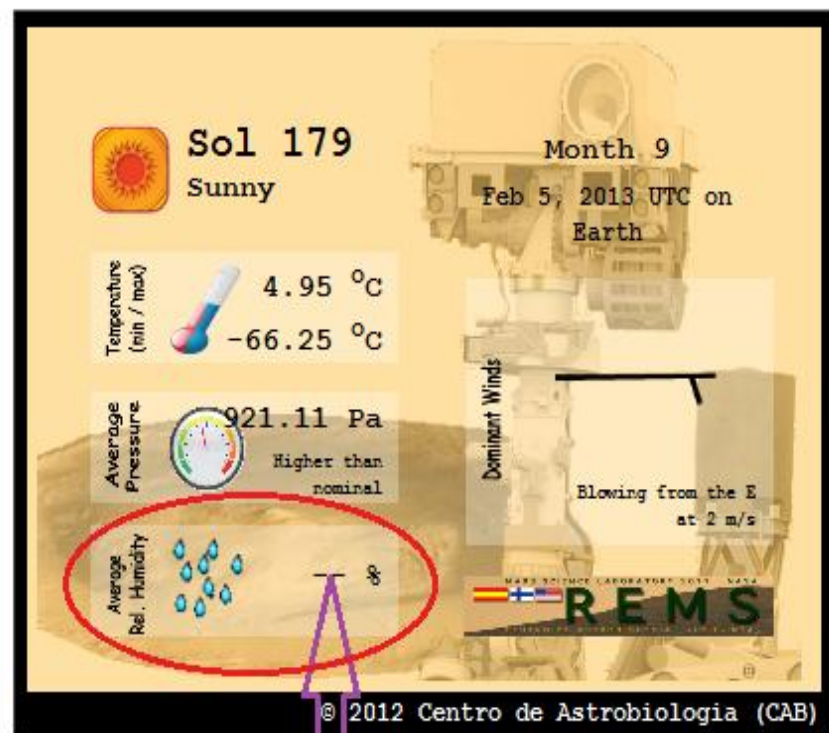
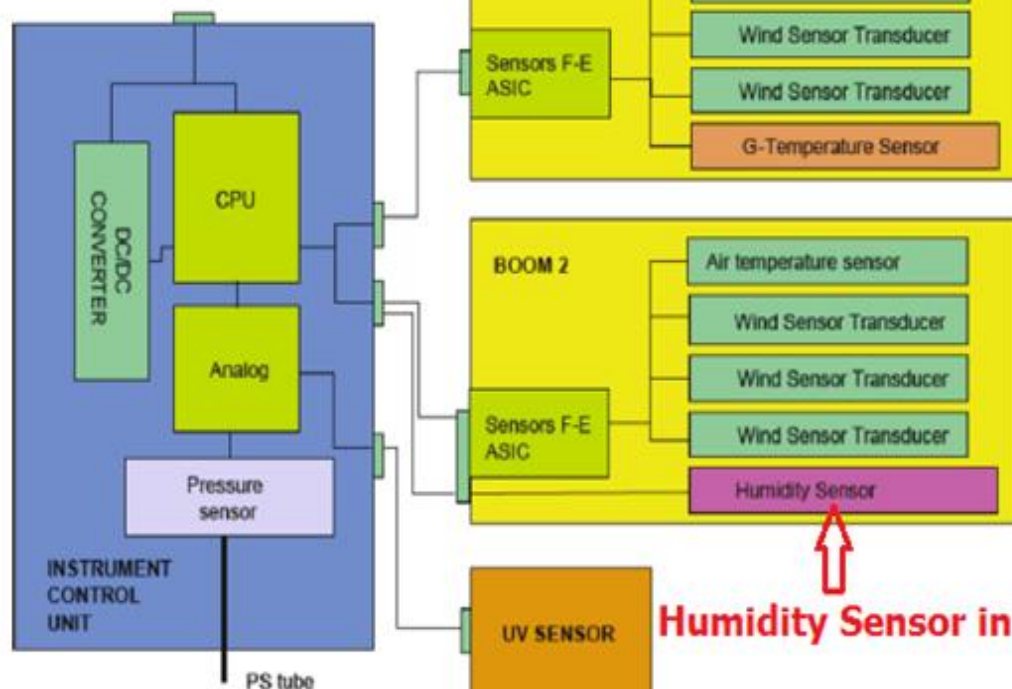
Only Boom 1 broke on Landing. Why no relative humidity reported from Boom 2? Calibration problems with the Thermal and Electrical Conductivity Probe?

G.M. Martinez et al., 2013

REMS Block Diagram

Boom 1 Broke on Landing

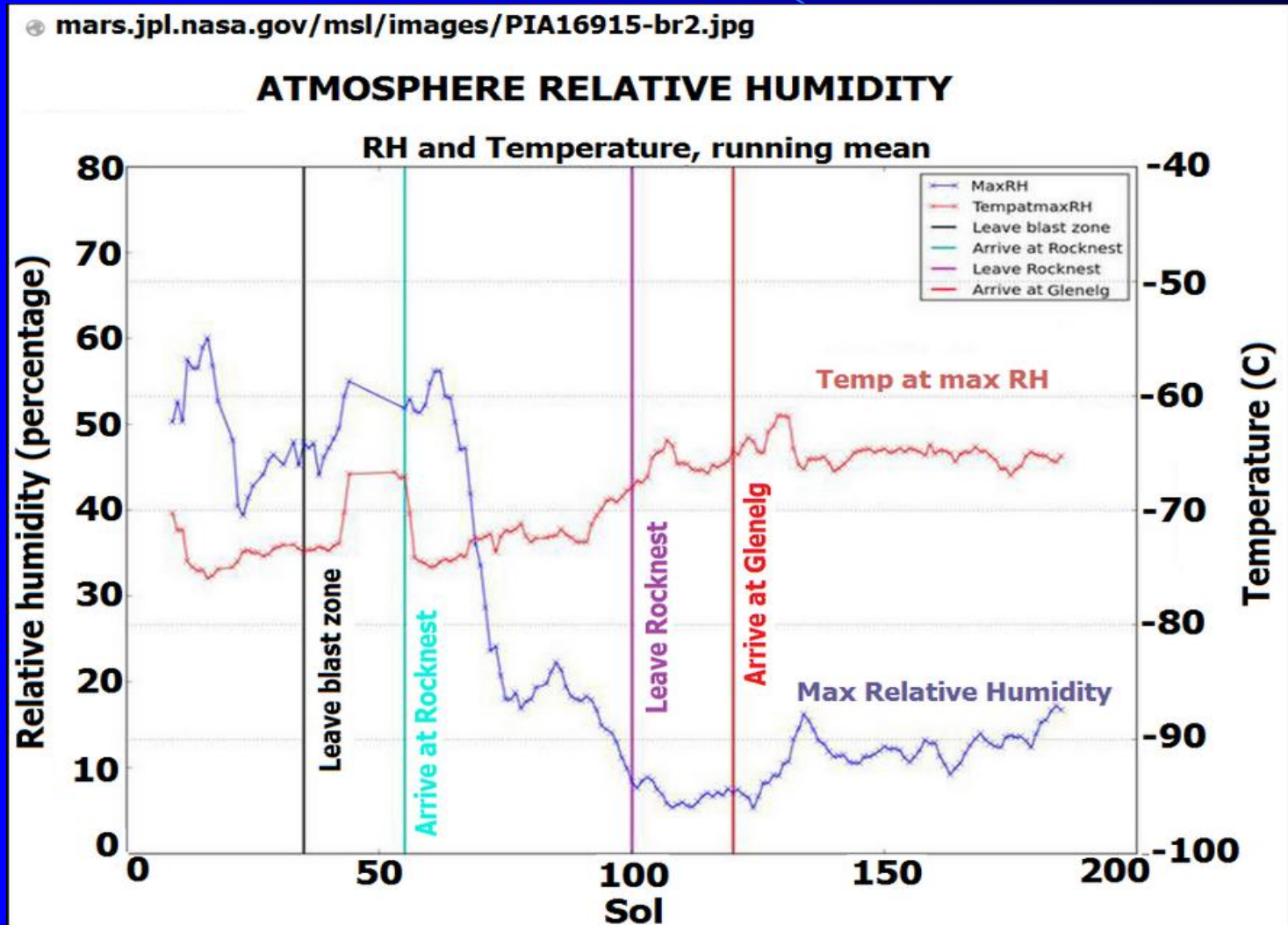
Rover Electrical Interfaces



© 2012 Centro de Astrobiologia (CAB)

REMS Reports always show no relative humidity

The REMS Team leaves Relative Humidity off daily reports, but published this on 6/27/2013:



REMS Asserts Huge Changes in Relative Humidity Over Very Short Distances

43

← mars.jpl.nasa.gov/msl/images/MSL_TraverseMap_Sol0313_fcalef-br2.jpg

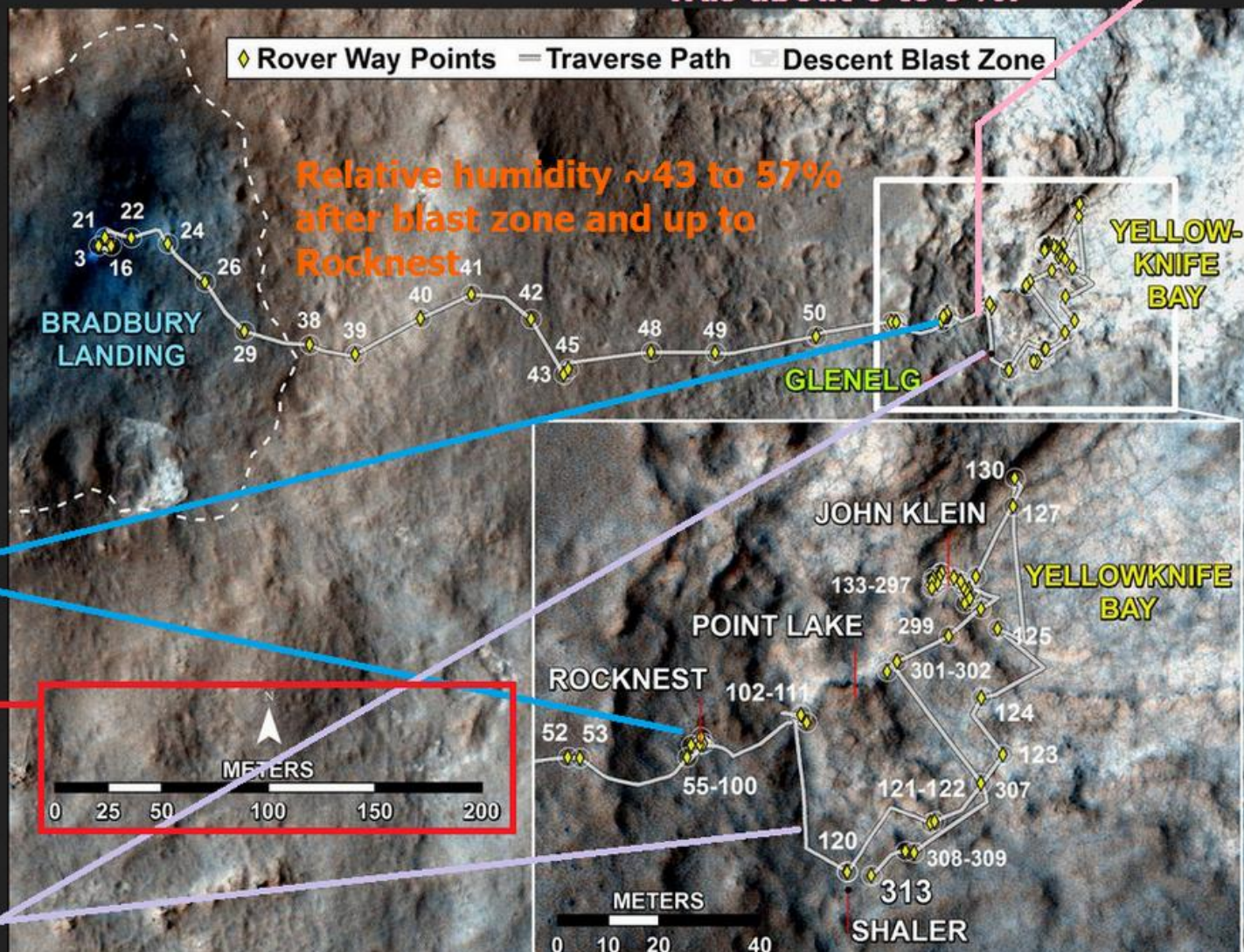
Between Rocknest & Glenelg RH was about 6 to 9%.

Relative humidity = ~40 to 60% in landing blast zone.

At Rocknest relative humidity drops from about 58% to ~9 % over 50 sols.

Note distance scale. Changes in RH over ~400 m.

At Glenelg RH varies from about 6% to 17%.



**If temperature measurements are wrong,
as saw earlier, and pressure measurements
are wrong, RELATIVE HUMIDITY
READINGS WILL BE WRONG TOO.**

September 26, 2013: JPL Announces Martian Soil is 2% Water.



- **There are 2 pints of water in every cubic foot of soil.**
- **If pressure was as low as NASA claims, water should have evaporated out of the soil, not absorbed it from the atmosphere.**

Problems with MSL Weather Reports

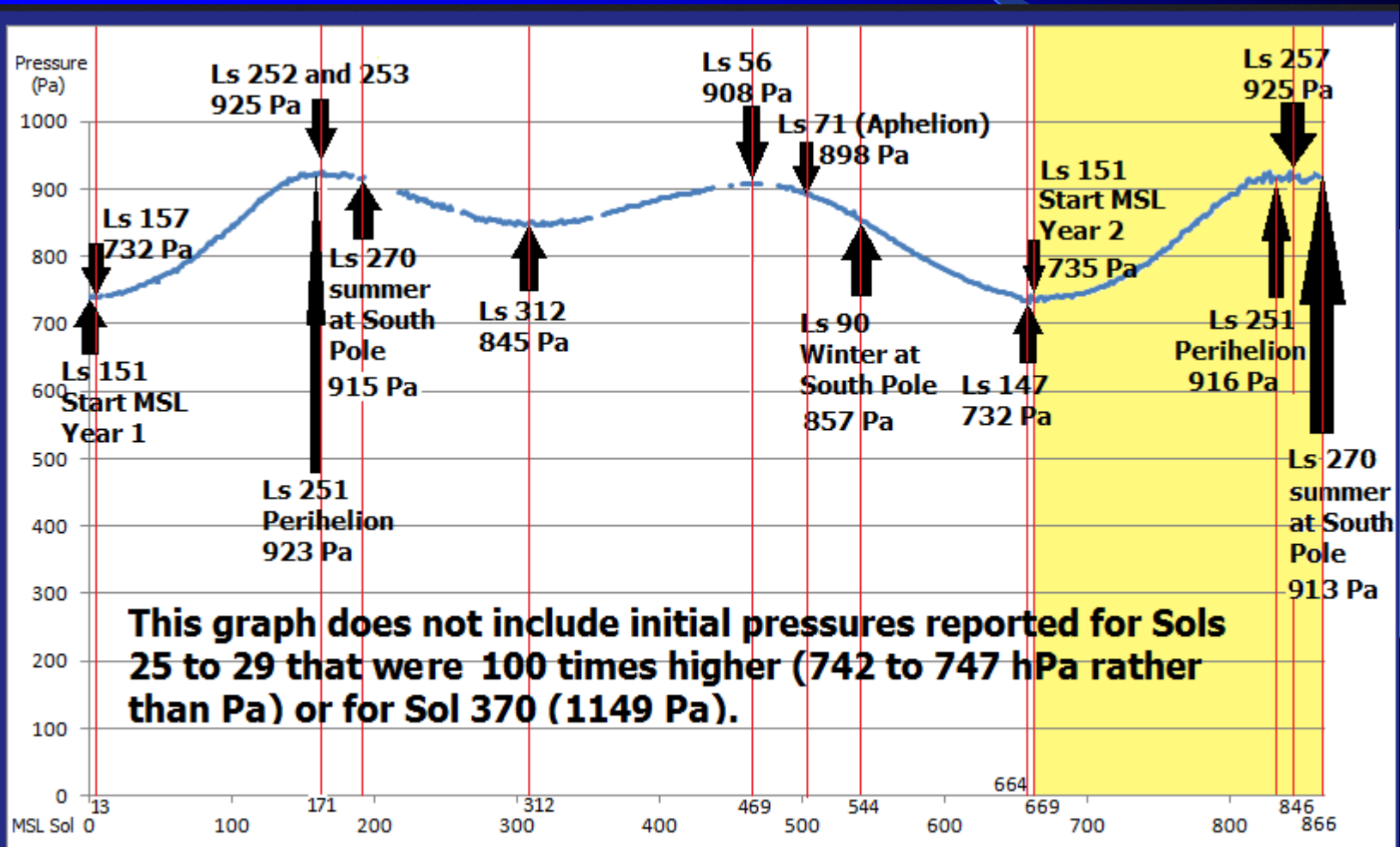
1. Sunrise/Sunset times until May, 2013.
2. Constant winds.
3. Relative Humidity.
4. Sol numbering and air temperatures.
5. Early wrong month labeling (3 vs. 6) = wrong place in orbit & wrong distance from the sun.
6. Exact ground temperatures issued when accuracy (18 F) was worthless.
7. Pressure units used August 30 To Sept. 5, 2012 (confusion by REMS between hPa and Pa); and pressures off the curve in 2012 and 2013.

Why Trash Occam?

- **Weather doesn't match low pressure values**
 - **Dust Devils**
 - **Dust Storms**
 - **Eye walls on huge storms over Arsia Mons**
 - **Stratus clouds at 16 km.**
 - **Too much sand movement for low pressure**
 - **Light in the sky 1 hr 40 min before sunrise and after sunset. Just due to high dust, or a denser atmosphere?**

Why Trash Occam?

- Viking data suspicious due to exact repeat over 4 yrs. Ditto for MSL shown on the graph below.



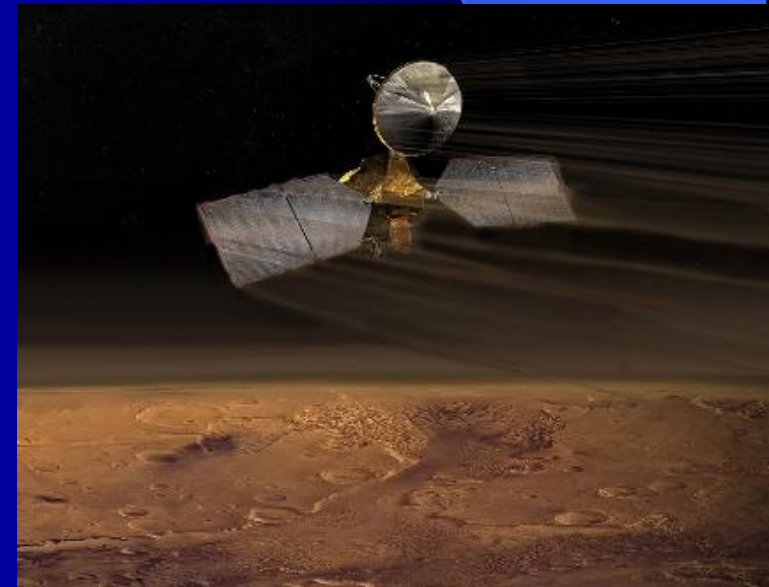
WHY TRASH OCCUM? MRO AEROBRAKING

"At some points in the atmosphere, we saw a difference in the atmospheric density ... 30% higher than the model, but ...

around the south pole

it was 350% off the model."

Han You,
Navigation Team Chief for
Mars Reconnaissance Orbiter (MRO).



Why Trash Occam?



Transport of water vapour in the Martian atmosphere.

Credit: ESA/AOES Medialab

Mars Express spacecraft reveals Mars air is supersaturated with water vapor (29 Sep 2011).

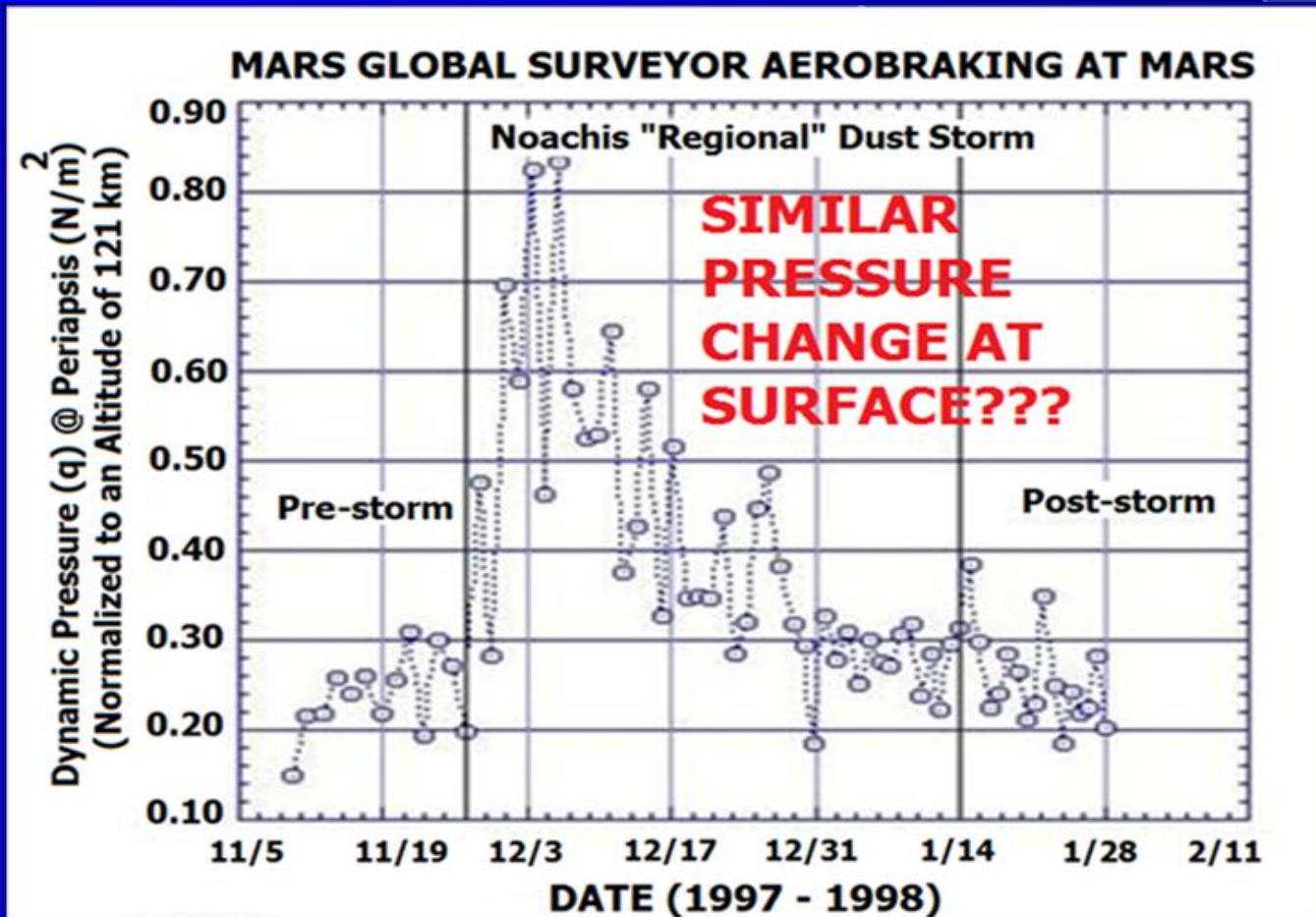
10 to 100 times more H_2O than expected at 20 to 50 km. Partial pressures imply denser air too.

- http://sci.esa.int/science-e-media/img/be/MEx_water_vapour_animation_400.gif

WHY TRASH OCCAM?

MGS Dynamic Pressure Spike @ 75 mile altitude
Due to Dust Storms.

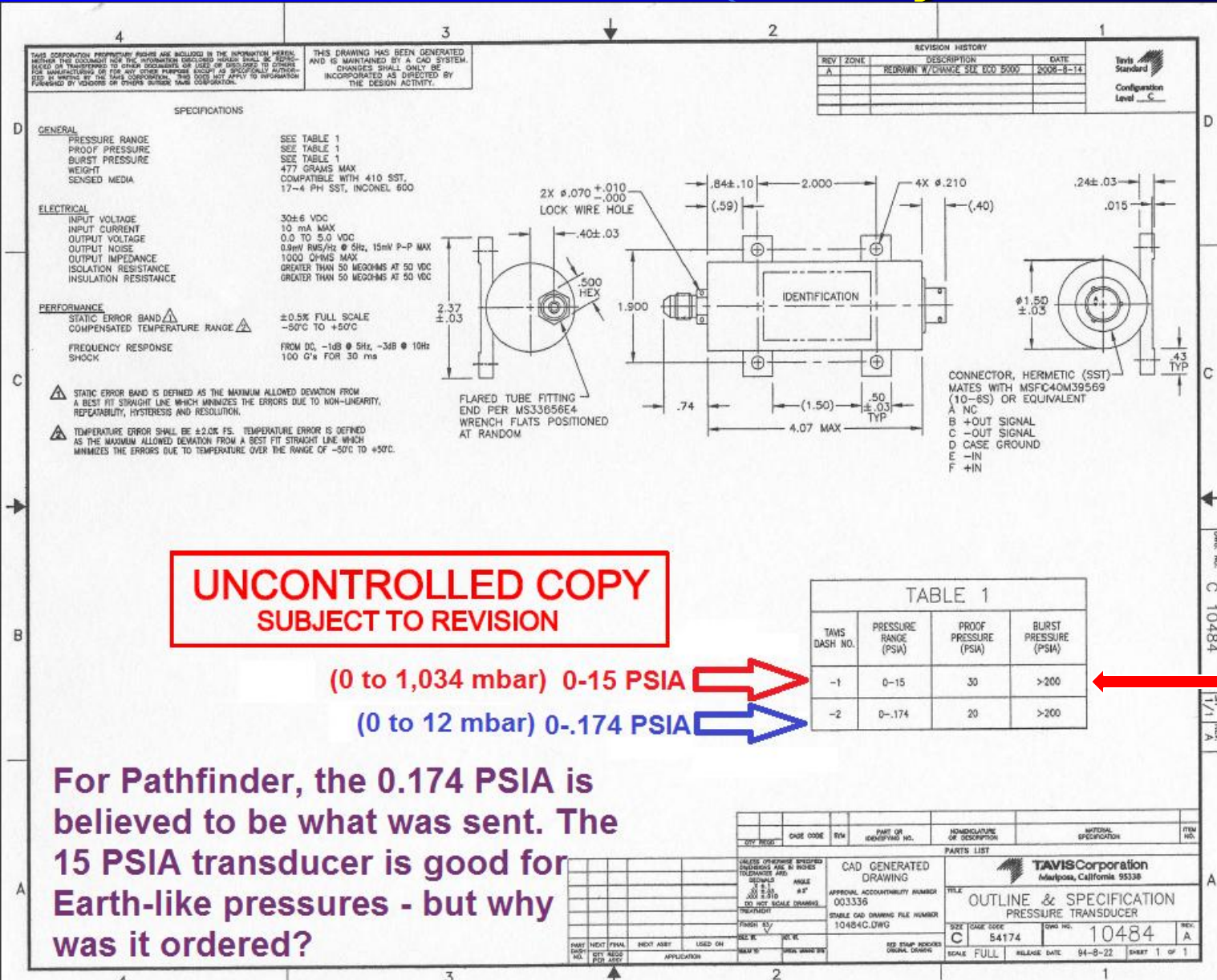
Pressure Doubles in 48 Hours, Up 5.6 Fold in 4 Weeks.



Why Trash Occam?

- **Pathfinder wind sensors went uncalibrated.**
 - True again with MSL.
- **Phoenix & MSL pressure sensor design problems. FMI delivered the MSL pressure sensor to NASA in 2008 (before ITAR problems could be fixed)!**
<http://space.fmi.fi/solar.htm>
- **No pressure sensors could measure > 18 mbar and MSL is limited to 11.5 mbar.) No sensor could measure pressure that would explain the weather seen.**
- **No way to change Viking, MPF, Phoenix & MSL dust filters that could clog.**

There is an issue with which Tavis Pressure Transducers were actually sent to Mars.



The sensor labeled Tavis Dash No. 1 could Measure Earth-like Pressure!

**Are JPL errors mistakes; or is NASA putting off
manned missions to Mars to hide the truth about
Cydonia, where the famous "face" was clearly
seen by a Viking orbiter in 1976, but not later?**

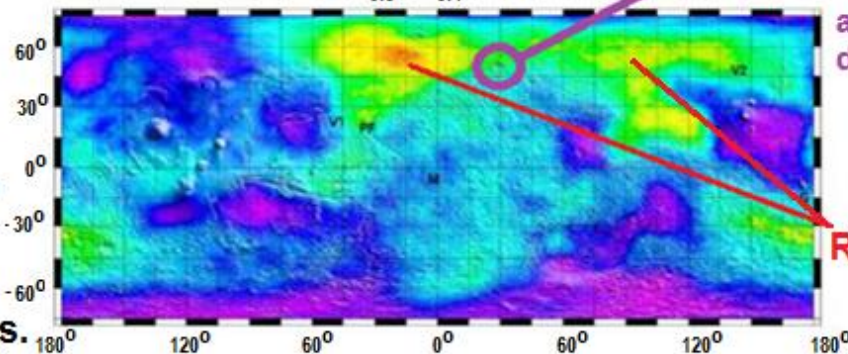
Highest-Resolution View of "Face on Mars"

MGS MOC Release No. MOC2-283, 24 May 2001



Do radioactive sites on Mars mandate disinformation?

Radioactive Potassium (Percentage by mass)



Lyot impact crater at 50 North, 29.3 East (330.7 W) is where Brandenburg thinks an asteroid hit that destroyed Martian oceans.



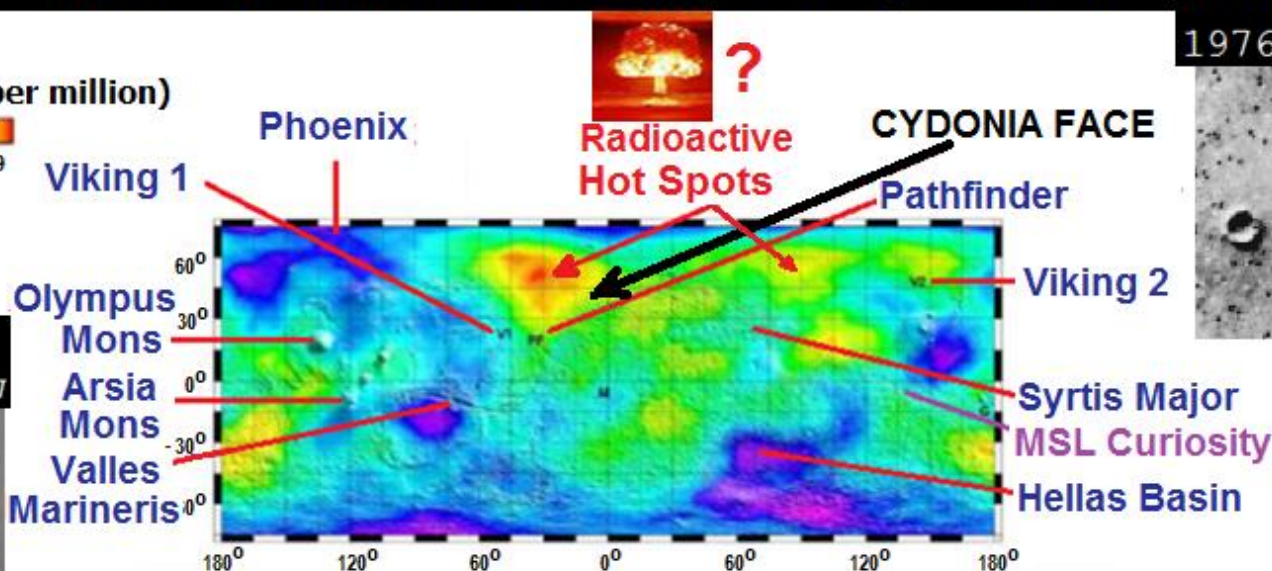
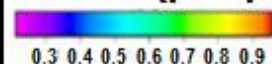
Radioactive Hot Spots



Figure 1. Distribution of radioactive potassium on Mars

Adapted from Brandenburg, 2011, to relate radioactive hot spots to landers that had meteorology capabilities, Cydonia "face" and geographic landmarks.

Thorium (part per million)



Radioactive Hot Spots

1976 Viking view



2001 MGS view

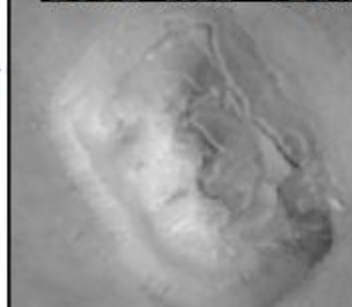


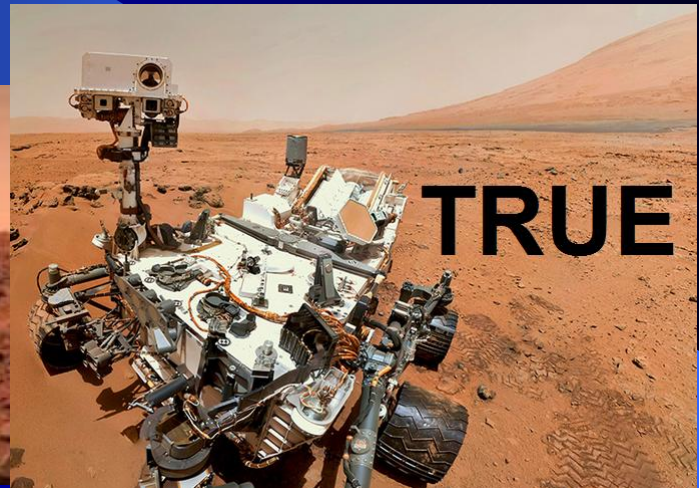
Figure 2. Distribution of Thorium on Mars

1976 Viking view



Why did NASA Administrator James Fletcher order the alteration of Martian sky color in 1976?

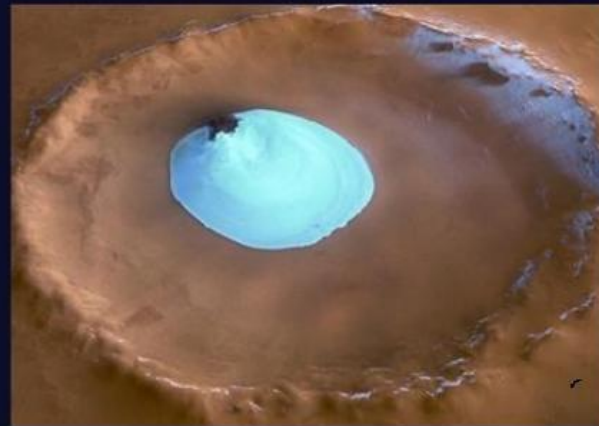
- * He was smart – BS from Columbia, PhD from Cal Tech, taught at Harvard and Princeton.
- * But kept us in low Earth orbit until now and beyond.
- * Every picture of Mars sky color was wrong for 36 years after his order until MSL in August 2012.



The face is an issue, the nuclear past is questionable, but evidence for higher than advertised pressure and sloppy handling of Mars weather data is irrefutable.



CRATER LAKE, OREGON
(Maximum diameter = 9.7 km,
Maximum depth = 594 meters,
average height of rim above
lake = 305 meters)



VASTITAS BOREALIS, MARS
(Maximum width = 35 km)
Imaged centered at 70.1° North latitude,
103.21° East longitude

Mars is more like Earth than we have been told.

Our latest Basic Report is at

<http://marscorrect.com/16%20January%202015%20Mars%20Report.pdf>