ANNEX P TO MARS CORRECT: CRITIQUE OFF ALL NASA MARS WEATHER DATA MSL Year 2 Autumn (LS 0 to 90, Sols 1,019 to 1,213)

This Annex reveals all Mars Science Laboratory (MSL) weather data for MSL's Mars Year 2 autumn. It shows what was published by the Rover Environmental Monitoring Station (REMS) Team and JPL. It also reveals what the Roffman Team sees as weather anomalies, and how the REMS Team and JPL altered their data after we color-highlighted what was off the expected temperature and pressure curves.

EXPLANATION OF COLUMN DATA FOR ANNEX P

Column A (Sol). The Martian day is about 39 minutes longer than the terrestrial day.

Column 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 pressure reported by the REMS Team.

Column D shows the date on Earth.

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 Column J shows the minimum ground temperature. When it change in pressure in Pascals from the same Ls 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 F shows minimum air temperature.

Column G shows the air temperature range for each sol. On Earth temperatures can vary by 40 °C in deserts. In column G where the range is 59 °C or less yellow background coloring points that out. The National Park Service claims 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. There were 2 days in Montana where the temperature changed by 57 °C.

Column H 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. For MSY Year 1 when we was not found. In column L we see a variation in altered the devisor from 40 °C to 57 °C then 88 of the ratios were altered to 1 or less than 1, meaning that Martian air pressure is indeed likely much higher than NASA claims.

Column I 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 Column E shows the maximum air temperature. With REMS is above 0°C it is shown with a red background.

> is -90 °C or colder the background is in purple. The ground temperatures are not very precise. 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.

Column K. Drop in ground temperature from day to night.

Column L 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 11 °C or more this in indicated with a dark blue background.

Column M 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 guick survey of the data immediately shows that this heating between 0 °C and at least 15 °C with a 54 °C anomaly on Sol 1,070. 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.

Column N shows the pressure for the same Ls in MSL Year 1.

Column O shows the absolute value of the in the previous year (Column [M] - [C]).

Column P shows the Ls during Year 1.

Column Q shows the original pressure for the same Ls in MSL Year 1 before JPL revised their data.

Column R shows the UV for the sol in Year 2.

Column S shows the UV for the sol in Year 1. All sols in MSL Year 1 and Year 2 have opacity listed as "sunny" which seems dubious.

Column T shows comments, if any.

	Α	В	С	D	E	F	G	Н	I	J	K	L	M	N	0	Р	Q	R	S	T
S	OL ~		PRESSURE Pa	EARTHDATE	MAX AIR TEMP °C	TEMP °C	AIR TEMP RANGE °C Yellow = -59°C or warmer	RANGE °C/40	GROUND	GROUND	∆ GROUND TEMP DAY TONIGHT		CHANGE IN TEMP °C AIR	PRESSURE AT SAME LS IN MSL YEAR 1	PRESSURE YEAR 1 TO YEAR 2 SAME LS	year 1	PRESSURE YEAR 1 BEFORE REVISION	UV YR 2	YR	COMMENTS
								Green = <1.5	Red = > 0°C	PURPLE = >=90°C or colder	Yellow numbers = - 80 to -89 °C, red background = -90°C or colder drop		PURPLE =>10°C		(yellow = > 7 Pa)					

1019	0	819	6/19/2015	-14	-36	-22	0.55	-2	-24	-22	12	+12	853	34	0	N/A	M	н	BEGIN AUTUMN
1020	0	832	6/20/2015	-12	-63	-51	1.275	1	-65	-66	13	-2	854	22	0	N/A	Н	Н	
1021	1	850	6/21/2015	-14	-76	-62	1.55	-1	-77	-76	<mark>13</mark>	-1	855	5	1	N/A	Н	Н	UV altered from Low
1022	1	852	6/22/2015	-12	-75	-62	1.55	-12	-77	-65	0	-2	857	5	1	N/A	Н	Н	
1023	2	851	6/23/2015	-15	-77	-62	1.55	-1	-77	-76	14	0	857	6	2	N/A	M	н	
1024	2	851	6/24/2015	-15	-76	-61	1.525	-1	-78	-77	14	-2	856	5	2	N/A	Н	н	
1025	3	851	6/25/2015	-14	-74	-60	1.5	-1	-78	-77	13	-4	857	6	3	N/A	Н	Н	
1026	3	868 revised to 851	6/26/2015	-62 revised to -16	-69 revised to -78	-7 revised to -62	0.175 revised to 1.55		-67 revised to -78	-77 after revision	8 revised to 15	+2 revised to 0	N/A	N/A	3	N/A	L	N/A	Maximum air and ground temps were impossibly low.
1027		N/A	6/27/2015	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	4	N/A	N/A	N/A	
1028	4	853	6/28/2015	-15	-75	-60	1.5	-2	-77	-75	13	-2	N/A	N/A	4	N/A	Н	N/A	
1029	5	856	6/29/2015	-14	-75	-61	1.525	-2	-77	-75	12	-2	N/A	N/A	5	N/A	Н	N/A	
1030	5	855	6/30/2015	-15	-77	-62	1.55	-1	-78	-77	14	-1	N/A	N/A	5	N/A	Н	N/A	
1031	6	858	7/1/2015	-15	-76	-61	1.525	-12	-78	-66	3	-2	N/A	N/A	6	N/A	Н	N/A	
1032	6	854	7/2/2015	-16	-74	-58	1.45	0	-79	-79	<mark>16</mark>	-5	N/A	N/A	6	N/A	Н	N/A	
1033	7	856	7/3/2015	-14	-77	-63	1.575	-2	-79	-77	12	-2	N/A	N/A	7	839	Н	N/A	

Α	В	С	D		E	F	G	н	ı	J	K	L	М	N	0	Р	Q	R	S	Т
SOL		PRESSURE Pa	EARTHDATE	MAX AI °C		TEMP °C	AIR TEMP RANGE °C Yellow = -59°C or warmer	AIR TEMP RANGE °C/40 Green = <1.5	MAX GROUND TEMP °C Red = > 0°C	GROUND	TONIGHT	DAYTIME CHANGE IN TEMP °C AIR TO GROUND Blue = >10°C	CHANGE IN	PRESSURE AT SAME LS IN MSL YEAR 1	PRESSURE YEAR 1 TO	~LS year 1	PRESSURE YEAR 1 BEFORE REVISION	UV YR 2	YR	COMMENTS
											red background = -90°C or colder drop									
1034		7	859 7	7/4/2015	-14	-76	-62	1.55	-1	-77	-76	<mark>13</mark>	-1	861	2	7	N/A	Н	Н	
1035		8	857 7/	/5/2015	-12	-77	-65	1.625	6	-77	-83	18	0	862	5	8	N/A	Н	н	
1036		8	860 7/	/6/2015	-17	-76	-59	1.475	4	-82	-86	13	-6	863	3	8	N/A	н	н	
1037		9	856 7/	/7/2015	-21	-80	-59	1.475	-1	-80	-79	20	0	865	9	9	N/A	н	н	
1038		9	858 7/	/8/2015	-21	-76	-55	1.375	-1	-84	-83	20	-8	865	7	9	1149 on Sol 370 (August 21, 2013)	н		ORIGINAL YR 1 MAX PRESSURE SHOWED PRESSURE SENSOR PEGGED OUT AT MAX. JPL DATA MANIPULATION IS SUSPECTED.
1039		10		/9/2015	-21		-56	1.4	-1	-84	-83	20	-7	865	8	10	N/A	Н		
1040		10	858 7/1	10/2015	-21	-77	-56	1.4	0	-82	-82 -83	21	-5	866	8	10	N/A	Н	Н	
1041		11	859 7/1	11/2015	-22	-77	-55	1.375	0	-83	-03	<mark>22</mark>	-6	866	7	11	N/A	Н	Н	
1042		11		12/2015	-20		-56	1.4	-4	-83	-79	16	-7	866	7	11	N/A		Н	
1043		12	860 7/1	13/2015	-20	-77	-57	1.425	-3	-76	-73	17	+1	867	7	12	N/A	M	Н	
1044		12	860 7/	14/2015	-20	-79	-59	1.475	-3	-76	-73	17	+3	870	10	12	N/A	M	Н	
1045		13	861 7/	/15/2015	-13	-80	-67	1.675	1	-82	-83	14	-2	870	9	13	N/A	Н	Н	
1046		13	862 7/1	16/2015	-12	-77	-65	1.625	2	-81	-83	14	-4	869	7	13	N/A	н	н	
1047		14	863 7/	/17/2015	-14	-77	-63	1.575	2	-81	-83	16	-4	870	7	14	N/A	Н	Н	
1048		14	864 7/1	18/2015	-15	-78	-63	1.575	-2	-80	-78	<u>17</u>	-2	870	6	14	N/A	Н	Н	

Α	В	С	D		E	F	G	Н	1	J	K	L	М	N	0	Р	Q	R	S	т
SOL		PRESSURE Pa	EARTHDATE	°C		TEMP °C	AIR TEMP RANGE °C Yellow = -59°C or warmer	AIR TEMP RANGE °C/40		GROUND	TONIGHT	CHANGE IN TEMP °C AIR TO	CHANGE IN TEMP °C AIR	LS IN MSL YEAR 1	PRESSURE YEAR 1 TO YEAR 2 SAME LS	~LS year 1	PRESSURE YEAR 1 BEFORE REVISION	UV YR 2	YR	COMMENTS
								Green = <1.5	Red = > 0°C	PURPLE = >=90°C or colder	Yellow numbers = -	Blue = >10°C	TO GROUND		(yellow = > 7 Pa)					
											80 to -89 °C, red background = -90°C or colder drop		=>10°C							
1049		15	864 7/	19/2015	-21	-75	-54	1.35	5	-83	-88	<mark>26</mark>	-8	871	7	15	N/A		Н	
1050		15		20/2015	-22		-54	1.35	6	-92	<mark>-98</mark>	28	-16	872	9	15	N/A	Н		
1051		16		21/2015	-20	-	-56	1.4	4	-91	<mark>-95</mark>	24	-15	874	10	16	N/A	Н		
1052		16		23/2015	-12		-66	1.65		-84	-85	13	-6	875	10	16	N/A	Н		
1053 1054		17 17		24/2015 25/2015	-11 -11		-68 -66	1.7 1.65	8 6	-84 -89	-92 -95	19	-5 -12	874 873	9	17	N/A	H		
1054		17		26/2015	-20		-57	1.425	6	-90	-95 -96	26	-12	874	6	17 18	N/A N/A	Н		
1056		18		27/2015	-21		-55	1.375		-91	-95	25	-15	875	7	18	N/A		Н	
1057		18		28/2015	-22	-78	-56	1.4	6	-80	-86	28	-2	875	8	19	N/A		Н	
1058		19	868 7/2	29/2015	-22	-78	-56	1.4	1	-78	-79	23	0	875	8	19	N/A	н	н	
1059		19		30/2015	-20	-78	-58	1.45	2	-77	-79	22	1	875	5	20	N/A	н	н	
1060		20		31/2015	-16	-78	-62	1.55	2	-78	-80	18	0	876	6	20	N/A	Н	Н	
1061		20	8/1	/1/2015	-23	-77	-54	1.35	3	-78	-81	26	-1	877	6	21	N/A	Н	Н	
1062		21	8/2	/2/2015	-24		-53	1.325		-80	-82	<u>26</u>	-3	878	6	21	N/A	Н	Н	
1063		21		3/32015	-19	-79	-60	1.5	1	-77 -77	-78	20	2	878	5	22	N/A	Н	Н	
1064		22	972	/4/2015	-22	-77	-55	1.375	2	-77 -79	-79	24	0	879	8	22	N/A		Н	
1065		22	873 8	/5/2015	-19	-78	-59	1.475	2	-78	-80	21	0	880	7	23	N/A	Н	Н	

Α	В	С		D	E	F	G	Н	I	J	K	L	M	N	0	Р	Q	R	S	т
SOL		PRESSUR Pa	E EARTH		MAX AIR TEMP °C		AIR TEMP RANGE °C Yellow = -59°C or warmer	AIR TEMP RANGE °C/40 Green = <1.5	TEMP °C		TONIGHT	DAYTIME CHANGE IN TEMP °C AIR TO GROUND Blue = >10°C	CHANGE IN TEMP °C	LS IN MSL YEAR 1	PRESSURE YEAR 1 TO	~LS year 1	PRESSURE YEAR 1 BEFORE REVISION	UV YR 2	YR	COMMENTS
											numbers = - 80 to -89 °C, red background = -90°C or colder drop		PURPLE =>10°C							
1066		23	875	8/6/20	-14	-78	-64	1.6	0	-79	-79	14	-1	880	5	23	N/A	u	Н	
		23			-24	-79			1	-87			-8			24				
1067			875	8/7/20	115	,,	-55	1.375	·	Vi	-88	25	ŭ	880	5		N/A	М	Н	
1068		24	874	8/8/20	-23	-76	-53	1.325	-3	-82	-79	<u>20</u>	-6	881	3	24	N/A	Н	Н	
1069		24	876	8/9/20	-22	-77	-55	1.375	-4	-79	-75	18	-2	881	5	24	N/A	н	н	
1070		25	877	8/10/2	-14	-80	-66	1.65	-5	-26	-21	9	54	882	5	25	N/A	н	н	
1071		25	878	8/11/20	015 -16	-78	-62	1.55	-4	-68	-64	12	10	883	5	25	N/A	н	Н	
1072		26	879	8/12/20	015 -15	-78	-63	1.575	2	-79	-81	17	-2	883	4	25	N/A	н	н	
1073		26	879	8/13/20	015 -15	-82	-67	1.675	1	-77	-78	16	5	883	6	26	N/A	M	н	
1074		27	878	8/14/20	015 -14	-77	-63	1.575	-2	-87	-85	12	-10	884	6	26	N/A	н	Н	
1075		27	879	8/15/2	015 -13	-77	-64	1.6	-3	-82	-79	10	-5	886	7	27	N/A	М	Н	
1076	:	28	880	8/16/20	15 -14	-81	-67	1.675	-1	-81	-80	13	0	887	7	27	N/A	M	Н	
1077	:	28	880	8/17/20	15 -16	-79	-63	1.575	-2	-81	-79	14	-2	887	7	28	N/A	М	Н	
1078	;	29	881	8/18/20	15 -18	-80	-62	1.55	1	-82	-83	19	-2	887	6	28	N/A	М	н	

Α	В	С	D	E	F	G	Н	I	J	K	L	M	N	0	Р	Q	R	S	Т
SOL		PRESSUR Pa	E EARTHDATE	MAX AIR TEMP °C		AIR TEMP RANGE °C Yellow = -59°C or warmer	AIR TEMP RANGE °C/40	MAX GROUND TEMP °C	GROUND	TONIGHT	DAYTIME CHANGE IN TEMP °C AIR TO GROUND	CHANGE IN TEMP °C AIR	PRESSURE AT SAME LS IN MSL YEAR 1	PRESSURE YEAR 1 TO YEAR 2 SAME LS	~LS year 1	PRESSURE YEAR 1 BEFORE REVISION	UV YR 2	YR	COMMENTS
							Green = <1.5	Red = > 0°C	PURPLE = >=90°C or colder	Yellow	Blue = >10°C	TO GROUND		(yellow = > 7 Pa)					
										numbers = -80 to -89 °C, red background = -90 °C or colder drop		PURPLE =>10°C							
1079	2	29 8	82 8/19/20	15 -21	-80	-59	1.475	-3	- 83	-80	18	-3	888	6	29	N/A	M	Н	
1080	2	29 8	8/20/20	-17	-77	-60	1.5	-3	-84	-81	14	-7	887	5	29	N/A	M	Н	
1081	3	30 8	8/21/20	-18	-77	-59	1.475	-7	-82	-75	11	-5	889	7	30	N/A	M	Н	
1082	3	30 8	82 8/22/20	-17	-79	-62	1.55	-7	-81	-74	10	-2	890	8	30	N/A	M	Н	
1083	3	31 8	83 8/23/20	-20	-80	-60	1.5	-7	-80	-73	13	0	889	6	31	N/A	M	Н	
1084	3	31 8	85 8/24/20	15 -22	-78	-56	1.4		-77	-68	13	1	890	5	31	N/A	Н	Н	
1085	3	32 8	86 8/25/20	-23	-79	-56	1.4	-10	-78	-68	13	1	889	3	32	N/A	M	Н	
1086	3	32 8	8/26/20	-25	-82	-57	1.425	-2	-82	-80	23	0	890	5	32	N/A	Н	Н	
1087	3	3	8/27/20	-19	-78	-57	1.425	-3	-83	-80	16	-5	891	6	33	N/A	Н	Н	
1088	3	3 8	85 8/29/20	-19	-77	-58	1.45	-7	-76	-69	12	1	891	4	33	N/A	Н	Н	
1089	3	4 8	85 8/30/20	-19	-76	-57	1.425	-7	-76	-69	12	0	892	7	33	N/A	Н	Н	
1090	3	4 8	8/31/20	-20	-78	-58	1.45	-6	-76	-70	14	2	891	5	34	N/A	Н	Н	
1091	3	5 8	86 9/1/20	-21	-77	-56	1.4	-7	-77	-70	14	0	893	7	34	N/A	Н	М	
1092	3	5 8	86 9/2/20	-23	-79	-56	1.4	-8	-78	-70	15	1	892	6	35	N/A	Н	М	

Α	В	С	D	E	F	G	Н	I	J	K	L	М	N	0	Р	Q	R	S	T
SOL	_	PRESSURE Pa		MAX AIR TEMP °C		AIR TEMP RANGE °C Yellow = -59°C or warmer	AIR TEMP RANGE °C/40	MAX GROUND TEMP °C	GROUND	TONIGHT	DAYTIME CHANGE IN TEMP °C AIR TO GROUND	CHANGE IN TEMP °C AIR	PRESSURE AT SAME LS IN MSL YEAR 1	PRESSURE YEAR 1 TO YEAR 2 SAME LS		PRESSURE YEAR 1 BEFORE REVISION	UV YR 2	YR	COMMENTS
							Green = <1.5	Red = > 0°C	PURPLE = >=90°C or colder	Yellow	Blue = >10°C	TO GROUND		(yellow = > 7 Pa)					
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1093	3	6 887	9/3/2015	-21	-77	-56	1.4	-4	-79	-75	17	-2	893	6	35	N/A	н	M	
1094	3	6 888	9/4/2015	5 -20	-80	-60	1.5	-7	-75	-68	13	5	893	5	36	N/A	Н	М	
1095	3	6 888	9/5/2015	5 -24	-79	-55	1.375	-8	-77	-69	16	2	893	5	36	N/A	M	М	
1096	3	7 888	9/6/2015	5 -24	-79	-55	1.375	-7	-78	-71	17	1	893	5	37	N/A	М	М	
1097	3	7 889	9/7/2015	-27	-78	-51	1.275	-8	-79	-71	19	-1	895	4	37	N/A	М	М	
1098	3	8 890	9/8/2015	-26	-78	-52	1.3	-10	-79	-69	16	-1	895	5	38	902	M	М	
1099	38	8 891	9/9/2015	-24	-78	-54	1.35	-7	-80	-73	17	-2	896	5	38	N/A	M	М	
1100	39	890	9/10/2	2015 -22	-79	-57	1.425	-8	-85	-77	14	-6	895	5	39	N/A	M	М	
1101	39	891	9/11/2	2015 -23	-80	-57	1.425	-4	-81	-77	19	-1	896	5	39	N/A	M	М	
1102	40	892	9/12/2	2015 -25	-84	-59	1.475	-6	-83	-77	19	1	895	3	40	N/A	М	М	
1103	40	893	9/13/2	2015 -26	-81	-55	1.375	-5	-81	-76	21	0	896	3	40	N/A	M		
1104	41	893	9/14/2	2015 -25	-79	-54	1.35	-6	-84	-78	19	-5	897	4	40	N/A	М	М	
1105	41	892	9/15/2	2015 -25	-78	-53	1.325	-9	-83	-74	16	-5	897	5	41	N/A	M	М	
1106	42	893	9/16/201	5 -22	-82	-60	1.5	-8	-82	-74	14	0	899	6	42	N/A	М	М	

Α	В	С	D	E	F	G	Н	I	J	K	L	M	N	0	Р	Q	R	S	Т
SOL		PRESSURE Pa	EARTHDATE	MAX AIR TEMP °C		AIR TEMP RANGE °C Yellow = -59°C or warmer	AIR TEMP RANGE °C/40		GROUND	∆ GROUND TEMP DAY TONIGHT	CHANGE	CHANGE IN TEMP °C AIR	PRESSURE AT SAME LS IN MSL YEAR 1	PRESSURE YEAR 1 TO YEAR 2 SAME LS		PRESSURE YEAR 1 BEFORE REVISION	UV YR 2	YR	COMMENTS
							Green = <1.5	Red = > 0°C	PURPLE = >=90°C or colder	Yellow numbers = -	Blue = >10°C	TO GROUND PURPLE		(yellow = > 7 Pa)					
										80 to -89 °C, red background = -90°C or colder drop		=>10°C							
1107	4	2 89	9/17/20)15 -24	-79	-55	1.375	-7	-80	-73	17	-1	899	6	42	N/A	М	М	
1108	4	2 89	5 9/18	3/2015 -25	-78	-53	1.325	-6	-81	-75	19	-3	899	4	43	N/A	M	М	
1109	4	3 89	5 9/19	9/2015 -26	-82	-56	1.4	-7	-79	-72	19	3	900	5	43	N/A	M	M	
1110	4	3 89	9/20)/2015 -25	-81	-56	1.4	-8	-82	-74	17	-1	900	5	44	N/A	M	М	
1111	4	4 890	9/21	/2015 -26	-79	-53	1.325	-13	-79	-66	13	0	901	5	44	N/A	Н	М	
1112	4	4 89	9/22/201	15 -24	-80	-56	1.4	-10	-78	-68	14	2	N/A	N/A	44	N/A	Н	N/A	
1113	4	5 89	9/23	/2015 -24	-79	-55	1.375	-12	-74	-62	12	5	N/A	N/A	45	N/A	M	N/A	
1114	4	5 890	9/24	/2015 -25	-79	-54	1.35	-12	-75	-63	13	4	N/A	N/A	45	N/A	M	N/A	
1115	4	6 89	7 9/25	/2015 -21	-80	-59	1.475	-11	-76	-65	10	4	N/A	N/A	46	N/A	M	N/A	
1116	4	6 89	9/26	/2015 -26	-79	-53	1.325	-13	-77	-64	13	2	N/A	N/A	46	N/A	M	N/A	
1117	4	7 898	9/27	/2015 -25	-79	-54	1.35	-12	-78	-66	13	1	N/A	N/A	47	N/A	M	N/A	
1118	4	7 89	9/28	/2015 -25	-80	-55	1.375	-13	-76	-63	12	4	N/A	N/A	47	N/A	M	N/A	
1119	4	8 908	9/29/20)15 -55	-81	-26	0.65	-46	-76	-30	9	5	N/A	N/A	48	N/A	L		Data likely wrong. Look for JPL to alter it!

Α	В	С	D		E	F	G	Н	I	J	K	L	M	N	0	Р	Q	R	S	Т
SOL		PRESSUR Pa	EARTHD	OATE MAX °C	AIR TEMP			AIR TEMP RANGE °C/40			TONIGHT	CHANGE IN TEMP °C AIR TO GROUND	CHANGE IN TEMP °C AIR	PRESSURE AT SAME LS IN MSL YEAR 1	PRESSURE YEAR 1 TO YEAR 2 SAME LS		PRESSURE YEAR 1 BEFORE REVISION	UV YR 2	YR	COMMENTS
								Green = <1.5	Red = > 0°C	PURPLE = >=90°C or colder	Yellow numbers = -	Blue = >10°C	PURPLE =>10°C		(yellow = > 7 Pa)					
											80 to -89 °C, red background = -90°C or colder drop		=>10 C							
1119		48	899	9/29/2015	-22	-81	-59	1.475	-12	-76	-64	10	5	N/A	N/A	48	N/A	M		BINGO! As predicted on the line above, the REMS Team/ JPL altered the report for Sol 1119 on the day after it was first published. See Figure 1 below.
1120		48	900	9/30/2015	-24	-80	-56	1.4	-11	-75	-64	13	5	N/A	N/A	48	N/A	М	N/A	
1121		48	901	10/1/2015	-25	-81	-56	1.4	-13	-77	-64	12	4	N/A	N/A	49	N/A	М	N/A	
1122		49	901	10/2/2015	-26	-79	-53	1.325	-13	-78	-65	13	1	N/A	N/A	49	N/A	М	N/A	
1123		49	900	10/3/2015	-27	-79	-52	1.3	-12	-78	-66	15	1	905	5	50	N/A	M	N/A	
1124		50	900	10/4/2015	-26	-80	-54	1.35	-12	-78	-66	14	1	905	5	50	N/A	M	M	
1125	:	50	900	10/6/2015	-22	-79	-57	1.425	-13	-78	-65	9	1	N/A	N/A	51	N/A	M	N/A	
1126	:	51	901	10/7/2015	-21	-79	-58	1.45	-12	-78	-66	9	1	N/A	N/A	51	N/A	М	N/A	
1127		51	910	10/8/2015	-30	-80	-50	1.25	-13	-77	-64	17	3	N/A	N/A	52	N/A	M	N/A	Secondary pressure max Year 1 was 908 on Ls 56, but data was missing for Ls 51 to 53 and Ls 57.
1127	:	51	901	10/8/2015	-27	-80	-53	1.325	-13	-77	-64	14	3	N/A	N/A	52	N/A	М		JPL alters earlier data after I published this color-coled data.

Α	В	С	D		E	F	G	Н	I	J	K	L	M	N	0	Р	Q	R	S	Т
SOL	~LS	PRESSURE Pa	EARTHDAT	TE MAX A	AIR TEMP	TEMP °C	AIR TEMP RANGE °C Yellow = -59°C or warmer	AIR TEMP RANGE °C/40	TEMP °C	GROUND TEMP °C	TONIGHT	CHANGE IN TEMP °C AIR TO GROUND	CHANGE IN TEMP °C	PRESSURE AT SAME LS IN MSL YEAR 1	PRESSURE YEAR 1 TO		PRESSURE YEAR 1 BEFORE REVISION	UV YR 2	YR	COMMENTS
								Green = <1.5	Red = > 0°C		Yellow numbers = - 80 to -89 °C, red background = -90 °C or colder drop	Blue = >10°C	GROUND PURPLE =>10°C		> 7 Pa)					
1128	52			10/9/2015	-27	-79	-52	1.3		-78	-65 -64	14	1	N/A	N/A	52	N/A	М	N/A	
1129	52	2	902	10/10/2015	-23	-80	-57	1.425	-14	-78	-04	9	2	N/A	N/A	53	N/A	М	N/A	
1130	53	3	902	10/11/2015	-25	-81	-56	1.4	-13	-78	-65	12	3	N/A	N/A but 15 Pa off original	53	887	М	N/A	
1131	53	3	902	10/12/2015	-28	-81	-53	1.325	-14	-77	-63	14	4	906	4	53	N/A	М	М	
1132	53	3	902	10/13/2015	-27	-82	-55	1.375	-14	-77	-63	13	5	906	4	54	N/A	М	М	
1133	54	1	902	10/14/2015	-26	-82	-56	1.4	-14	-78	-64	12	4	906	4	54	N/A	М	М	
1134	54	1	902	10/15/2015	-27	-80	-53	1.325	-14	-81	-67	13	-1	907	5	55	N/A	М	М	
1135	55	5	901	10/16/2015	-27	-81	-54	1.35	-15	-81	-66	12	0	907	6	55	N/A	М	М	
1136	55	5	901	10/17/2015	-23	-82	-59	1.475	-14	-74	-60	9	8	907	6	N/A	N/A	М	M	
1137	56	6	901	10/18/2015	-26	-81	-55	1.375	-14	-79	-65	12	2	908	7	56	N/A	М	М	
1138	56	6	901	10/19/2015	-29	-82	-53	1.325	-15	-78	-63	14	4	N/A	N/A	56	N/A	М	М	
1139	57	7	901	10/20/2015	-25	-80	-55	1.375	-14	-80	-66	11	0	906	5	57	N/A	М	М	
1140	57	7	901	10/21/2015	-26	-81	-55	1.375	-16	-80	-64	10	1	907	6	57	N/A	М	М	
1141	57	7	902	10/22/2015	-28	-82	-54	1.35	-12	-80	-68	16	2	907	5	58	N/A	М	M	
1142	58	3	902	10/23/2015	-23	-82	-59	1.475	-14	-79	-65	9	3	906	4	58	N/A	M	М	

Α	В	С	D		E		F	G	Н	ı	J	K	L	M	N	0	Р	Q	R	S	Т
SOL		PRESSURE Pa	EARTHDA	ATE M.°C	AX AIR		TEMP °C	AIR TEMP RANGE °C Yellow = -59°C or warmer	AIR TEMP RANGE °C/40 Green = <1.5	TEMP °C		TONIGHT	DAYTIME CHANGE IN TEMP °C AIR TO GROUND Blue = >10°C	CHANGE IN	PRESSURE AT SAME LS IN MSL YEAR 1	PRESSURE YEAR 1 TO		PRESSURE YEAR 1 BEFORE REVISION	UV YR 2		COMMENTS
1143		58	901 1	10/24/20	115	-29	-82	-53	1,325	-17	-78	-61	12	4	906	5	59	N/A	М	M	
1144		59		10/25/20				-54	1.35	-10	-78	-68	18	4	906	4	59	N/A	M		
1145		59		10/25/20			-82	-49	1.225		-84	-64	13	-2	907	0	60	N/A		м	Suspiciously low hi temps, low ratio in column H. Watch for a revision by JPL/REMS.
1145		59	903	10/26/20	015	-29	-82	-53	1.325	-12	-84	-72	17	-2	907	4	60	N/A	M	м	Bingo! JPL again makes data revisions on 10/31/2015 that we predicted on 10/28/2015. See Figure 2.
1146		60	902 1	10/27/20)15	-28	-82	-54	1.35	-10 revised to - 16	-84 revised to -83	- 74 revised to -67	18 revised to 12	-2 revised to -1	N/A	N/A	60	N/A	М	М	
1147		60	901 1	10/28/20)15	-29	-80	-51	1.275	-17	-85	-68	12	-5	N/A	N/A	60	N/A	М	N/A	
1148		61	901 1	10/29/20)15	-28	-80	-52	1.3	-15	-83	-68	13	-3	N/A	N/A	61	N/A	М	N/A	
1149		61	902 1	10/30/20)15	-23	-81	-58	1.45	-17	-83	-66	6	-2	N/A	N/A	61	N/A	M	N/A	
1150		62	902 1	10/31/20)15	-29	-82	-53	1.325	-17	-86	-69	12	-4	N/A	N/A	62	N/A	М	N/A	
1151		62	901 1	11/1/201	15	-31		-51	1.275	-17	-78	-61	14	4	N/A	N/A	62	N/A	M	N/A	
1152		62	901 1	11/2/201	15	-30	-80	-50	1.25	-17	-85	-68	13	-5	N/A	N/A	63	N/A	M	N/A	
1153		63	900 1	11/3/201	15	-31	-82	-51	1.275	-16	-83	-67	15	-1	N/A	N/A	63	N/A	М	N/A	

Α	В	С	D		Е	F	G	н	ı	J	K	L	М	N	0	Р	Q	R	S	Т
SOL	~LS	PRESSURE Pa	EARTHD		MAX AIR TEMF C		AIR TEMP RANGE °C Yellow = -59°C or warmer	AIR TEMP RANGE °C/40 Green = <1.5	TEMP °C Red = > 0°C		TONIGHT	DAYTIME CHANGE IN TEMP °C AIR TO GROUND Blue = >10°C	CHANGE IN	PRESSURE AT SAME LS IN MSL YEAR 1	PRESSURE YEAR 1 TO		PRESSURE YEAR 1 BEFORE REVISION	U۷	UV YR	COMMENTS
											red background = -90°C or colder drop		=>10°C							
1154		63	900	11/4/201	5 -29	-84	-55	1.375	-13	-83	-70	16	1	904	4	64	N/A	M	М	
1155		64		11/5/201		-84	-58	1.45		-83	-70	13	1	904	4	64	N/A	м		
1156		64		11/6/201		-84	-54	1.35	-13	-85	-72	17	-1	903	3	64	N/A	М		
1157		65	900	11/7/201	5 -32	-82	-54	1.35	-14	-84	-70	17	-2	904	4	65	N/A	М	М	
1158		65		11/8/201		-82	-54	1.35		-87	-75	16	-5	904	6	65	N/A	M		
1159		66	898	11/9/201	5 -28	-82	-54	1.35	-14	-84	-70	14	-2	903	5	66	N/A	М	М	
1160		66	1177	11/10/20	015 -28	-80	-52	1.3	-15	-88	-73	13	-8	903	274	66	N/A	M	М	The pressures here and on the next sol are above the ability of the MSL pressure sensor to measure.
1161		66	1200	11/12/20	015 -26	-83	-57	1.425	-13	-84	-71	13	-1	902	298	67	N/A	M	М	Watch for JPL to alter pressures for sol 1160 and 1161. See Figure 3 below which preserves the pressures for these two sols.
1160		66	899											903	4 revised from 274.					BINGO! See Figure 4 below. On 1/21/2016, the day after we caught the REMS Team reviewing these spreadsheets they revised the pressure for Sol 1160 from 1177 Pa to 899 Pa and for Sol 1161 from 1200 Pa to 898 Pa.

Α	В	С)	E	E	F	G	Н	ı	J	K	L	M	N	0	Р	Q	R	S	Т
SOL	~LS	PRESSUR Pa	E EARTH	DATE	E MAX AIR TEMP °C				AIR TEMP RANGE °C/40	TEMP °C	TEMP °C	TONIGHT	CHANGE IN TEMP °C AIR TO GROUND	CHANGE IN	PRESSURE AT SAME LS IN MSL YEAR 1	PRESSURE YEAR 1 TO		PRESSURE YEAR 1 BEFORE REVISION	UV	UV YR	COMMENTS
									Green = <1.5	Red = > 0°C	PURPLE = >=90°C or colder	Vollow	Blue = >10°C	GROUND		> 7 Pa)					
												Yellow numbers = - 80 to -89 °C, red background = -90 °C or colder drop		PURPLE = >10°C							
1161		66	898												902	4 revised from 298.					See above. NASA should hire us to fix their broken data analysis system.
1162		67	897	11/13/2	2015 -	-24	-84	-57	1.425	-12	-85	-72	15	0	902	5	67	N/A	M	М	
1163		67	896	11/14/2	2015 -	-29	-86	-57	1.425	-12	-87	-75	17	-1	900	4	68	N/A	M	M	
1164		68	896	11/15/2	2015	-35	-86	-51	<mark>1.275</mark>	-14	-88	-74	21	-2	901	5	68	N/A	M	M	Record cold high temperature.
1165		68	897	11/16/2	2015	-35	-84	-49	1.225	-61	-89	-28	-26	-5	901	4	69	N/A	M	М	Severely cold record high ground temp. Watch for revision by JPL.
1166		69	895	11/17/2	2015 -	-31	-84	-53	1.325	-12	-78	-66	19	6	901	6	69	N/A	M	М	
1167		69	894	11/18/2	2015 -	-25	-84	-59	1.475	-13	-85	-72	12	-1	894	5	69	N/A	M	М	Air Temp low altered from -85 to -84
1168		70	894	11/19/2	2015 -	-29	-84	-55	1.375	-10	-86	-76	19	-2	897	3	70	N/A	М	M	
1169		70	894	11/20/2	2015 -	-32	-89	-57	1.425	-16	-89	-73	16	0	898	4	70	N/A	M	М	MARS APHELION
1170		71	893	11/21/2		-31		-54	1.35		-89	-74	16	-4	898	5	71	N/A	M	M	
1171		71	892	11/22/2	2015 -	-29	-87	-58	1.45	-15	-90	-75	14	-3	N/A	N/A	71	N/A	M	M	
1172		71	892	11/23/2		-26	-87	-61	1.525		-91	-78	13	-4	895	3	72	N/A	M	M	
1173		72	892	11/24/2	2015 -	-31	-87	-56	1.4	-14	-83	-69	17	4	895	3	72	N/A	M	M	
1174		72	891	11/25/2	2015 -	-25	-85	-60	1.5	-8	-86	-78	17	-1	894	3	73	N/A	М	М	

Α	В	С	D		Е	F	G	Н	I	J	K	L	М	N	0	Р	Q	R	S	т
SOL	. ~LS	PRESSURE Pa	E EARTHD		MAX AIR TEMP °C		AIR TEMP RANGE °C Yellow = -59°C or warmer	AIR TEMP RANGE °C/40	TEMP °C	TEMP °C	TONIGHT	CHANGE IN TEMP °C AIR TO GROUND	CHANGE IN TEMP °C	LS IN MSL YEAR 1	PRESSURE YEAR 1 TO	~LS year 1	PRESSURE YEAR 1 BEFORE REVISION	UV YR 2	YR	COMMENTS
								Green = <1.5	Red = > 0°C	PURPLE = >=90°C or colder		Blue = >10°C			> 7 Pa)					
										8	numbers = - 80 to -89 °C, red background		PURPLE = >10°C							
											= -90°C or colder drop									
											2									
117	5	73	890	11/26/2	2015 -23	-85	-62	1.55	-11	-86	-75	12	-1	894	4	73	N/A	М	М	
1176	6	73	890	11/27/2	2015 -31	-84	-53	1.325	-12	-89	-77	19	-5	893	3	73	N/A	М	М	
1177	7	74	888	11/28/2	2015 -27	-84	-57	1.425	-12	-89	-77	15	-5	895	5	74	N/A	M	M	
1178	3	74	888	11/29/2	2015 -26	-86	-60	1.5	-13	-88	-75	13	-2	892	4	74	N/A	M	М	
1179)	75	887	11/30/2	2015 -25	-85	-60	1.5	-12	-88	-76	13	-3	892	5	75	N/A	М	М	
1180)	75	886	12/1/20	015 -27	-86	-59	1.475	-11	-87	-76	16	-1	890	4	75	N/A	М	М	
1181	l	75	885	12/2/20	015 -24	-86	-62	1.55	-7	-86	-79	17	0	889	4	76	N/A	М	М	
1182	2	76	884	12/3/20	015 -29	-85	-56	1.4	-6	-91	-85	23	-6	888	4	76	N/A	М	М	
1183	3	76	883	12/4/20	015 -26	-86	-60	1.5	-5	-91	-86	21	-5	888	5	77	N/A	М	М	
1184	1	77	882	12/5/20	015 -28	-85	-57	1.425	-4	-94	- 90	<mark>24</mark>	-9	888	6	77	N/A	М	M	Odd: Day ground temps seem to warm a lot while night ground temps drop a lot. Winter solstice not far off (at Ls 90).
118	5	77	881	12/6/20	015 -24	-84	-60	1.5	-3	-94	-91	21	-10	885	4	77	N/A	н	М	Warm ground temp close to winter solstice
1186	6	78	881	12/7/20	015 -28	-86	-58	1.45	-8	-87	-79	20	-1	885	4	78	N/A	н	М	
1187	7	78	881	12/8/20	015 -29	-84	-55	1.375	-8	-91	-83	21	-7	884	3	78	N/A	М	М	

Α	В	С	D		E	F	G	Н	I	J	K	L	M	N	0	Р	Q	R	S	Т
SOL	_	PRESSURE Pa	EARTHD		MAX AIR TEMP C		AIR TEMP RANGE °C Yellow = -59°C or warmer	AIR TEMP RANGE °C/40			TONIGHT	CHANGE IN TEMP °C AIR TO GROUND	CHANGE IN TEMP °C	PRESSURE AT SAME LS IN MSL YEAR 1	PRESSURE YEAR 1 TO	~LS year 1	PRESSURE YEAR 1 BEFORE REVISION	UV YR 2	YR	COMMENTS
									0°C	1	Yellow numbers = - 80 to -89 °C, red background = -90°C or colder drop		PURPLE = >10°C		(yellow = > 7 Pa)					
1188				12/9/2015		-90 	-59	1.475	-11	-87	-76 -75	20	3	884		79	N/A	M		
1189		79	879 1	12/10/201			-63	1.575	-10	-85	-72	14	2	882		79	N/A	М		
1190	ľ	79	877 1	12/11/201	15 -29	-87	-58	1.45	-12	-84		17	3	881	4	80	N/A	Н	М	
1191	;	80	876 1	12/12/201	15 -28	-87	-59	1.475	-11	-83	-72	17	4	881	5	80	N/A	Н	М	
1192		80	875 1	12/13/201	15 -24	-86	-62	1.55	-10	-87	-77	14	-1	881	6	81	N/A	н	М	
1193		81	875 1	12/14/201	15 -28	-84	-56	1.4	-10	-86	-76	18	-2	880	5	81	N/A	М	М	
1194	:	81	873 1	12/15/201	15 -29	-84	-55	1.375	-5	-87	-82	24	-3	878	5	82	N/A	М	М	Warm ground temp close to winter solstice
1195		82	871 1	12/16/201	15 -30	-80	-50	1.25	-6	-82	-76	24	-2	877	6	82	N/A	M	М	
1196	:	82	871 1	12/17/201	15 -27	-86	-59	1.475	-7	-86	-79	20	0	876	5	82	N/A	М	М	
1197	:	83	869 1	12/18/201	15 -26	-85	-59	1.475	-13	-88	-75	13	-3	875	6	83	N/A	М	M	
1198		83	868 1	12/20/201	15 -23	-86	-63	1.575	-13	-89	-76	10	-3	873	5	83	N/A	Ĺ	М	
1199		84	868 1	12/21/201	15 -29	-86	-57	1.425	-14	-88	-74	15	-2	872	4	84	N/A	L	M	
1200		84	866 1	12/22/201	15 -27	-84	-57	1.425	-12	-88	-76	15	-4	872	6	84	N/A	L	М	
1201		84	866 1	2/23/201	15 -29	-85	-56	1.4	-13	-88	-75	16	-3	871	5	85	N/A	М	М	

Α	В	С	D		E	F	G	Н	I	J	K	L	М	N	0	Р	Q	R	S	T
SOL		PRESSURE Pa	EARTHDATE	MA °C	X AIR TEMP			AIR TEMP RANGE °C/4		GROUND TEMP °C	TONIGHT	CHANGE IN TEMP °C AIR TO GROUND	CHANGE IN TEMP °C AIR	PRESSURE AT SAME LS IN MSL YEAR 1	PRESSURE YEAR 1 TO YEAR 2 SAME LS		PRESSURE YEAR 1 BEFORE REVISION	YR	UV YR 1	COMMENTS
								Green = <1.5	Red = > 0°C	PURPLE = >=90°C or colder	Yellow numbers = -		TO GROUND PURPLE = >10°C		(yellow = > 7 Pa)					
											red background = -90°C or colder drop									
1202	85	864 1	2/24/2015	-22	-85 -6	3	1.5	575 -12	-87	-75	10	-2	86	9 5	85		N/A I	л N	Л	
1203	85	863 1	2/25/2015	-23	-85 -6	2	1	.55 -13	-87	-74	10	-2	86	8 5	86		N/A	л N	Л	
1204	86	862 1	2/26/2015	-25	-84 <mark>-5</mark>	9	-6	<mark>1 5</mark> -12	-87	-75	13	-3	86	7 5	86		N/A I	л N	Л	
1205	86	861 1	2/27/2015	-26	-86 -6	0		1.5 -13	-88	-75	13	-2	86	5 4	86		N/A I	/ N	1	
1206	87	859 1	2/28/2015	-24	-85 -6	1	1.5	525 -13	-87	-74	11	-2	86	5 6	87		N/A I	л N	1	
1207	87	858 1	2/29/2015	-25	-85 -6	0		1.5 -13	-88	-75	12	-3	86	4 6	87		N/A I	и N	Л	
1208	88	857 1	2/30/2015	-24	-85 -6	1	1.5	525 -12	-87	-75	12	-2	86	2 5	88		N/A I	и N	Л	
1209	88	855 1	2/31/2015	-24	-85 -6	1	1.5	525 -12	-88	-76	12	-3	86	1 6	88		N/A I	и N	1	
1210	88	855 1	I/1/2016	-23	-85 -6	2	1	.55 -12	-84	-72	11	1	86	7 1	2 89		N/A I	л N	1	
1211	89	853 1	/2/2016	-22	-83 -6	1	1.5	525 -12	-86	-74	10	-3	85	8 5	89		N/A	л N	1	
1212	89	855 1	1/3/2016	-28	-86 <mark>-5</mark>	8	1	.45 -13	-86	-73	15	0	85	7 2	90		N/A	л N	1	
1213	90	851 1	/4/2016	-27	-84 <mark>-5</mark>	7	1.4	<mark>125</mark> -12	-87	-75	15	-3	85	6 5	90		N/A I	/ N	л <mark>F</mark>	FIRST DAY OF WINTER

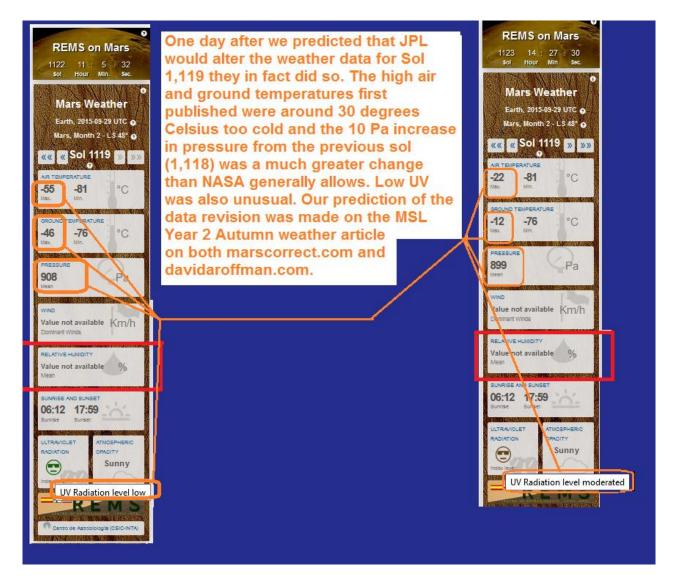


Figure 1 above. On October 3, 2015 JPL made the revisions to Sol 1,119 that we predicted a day earlier on October 2, 2015.

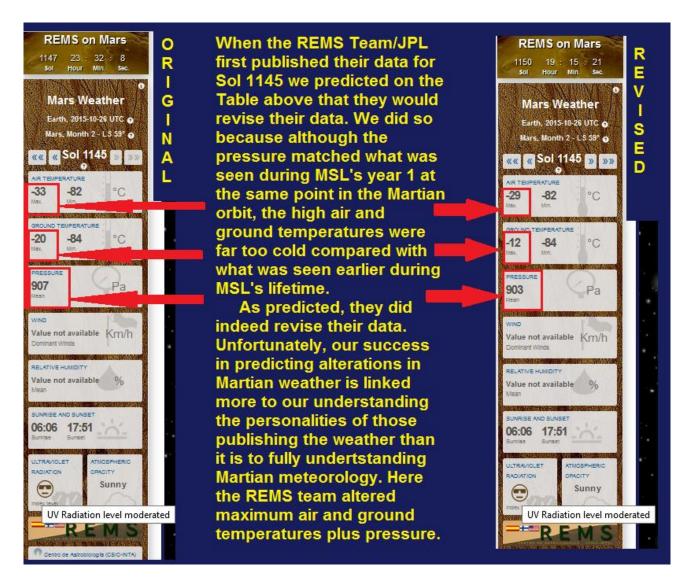


Figure 2: On October 31, 2015 JPL made the revisions to Sol 1,145 that we predicted on October 28, 2015.

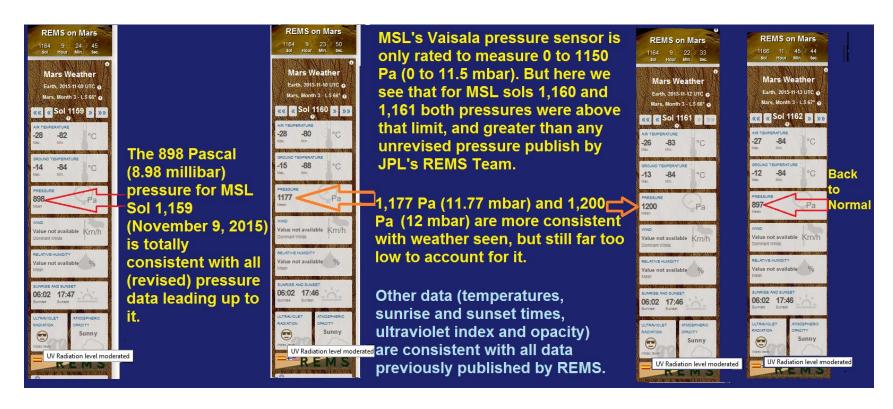


Figure 3: We predicted that JPL would alter the pressure data for sols 1160 and 1161 because the 1,117 Pa and 1,200 Pa mean pressures were above the 1,150 Pa rated ability of the Vaisala pressure sensor to measure for MSL. However, the predicted retreat has not yet occurred as of January 11, 2016 – probably because they saw that we were publishing their response with predictions on our tables and print-screens to back up our assertions. What is particularly odd about the 1,177 Pa pressure on Sol 1160 is that the REMS team had previously published a pressure of 857 Pa for that date. That was in line with previous pressures, yet for some reason they chose to go off script and off chart to raise the pressure in this bizarre manner (to a pressure higher than any previous accepted pressure measurement on Mars). Then they went higher still for the next sol (to 1,200 Pa/12 mbar) before falling right back into their old pattern at 857 Pa for Sol 1162. We think this may point to personnel issues which could conceivably relate to our ongoing audit of all their data.

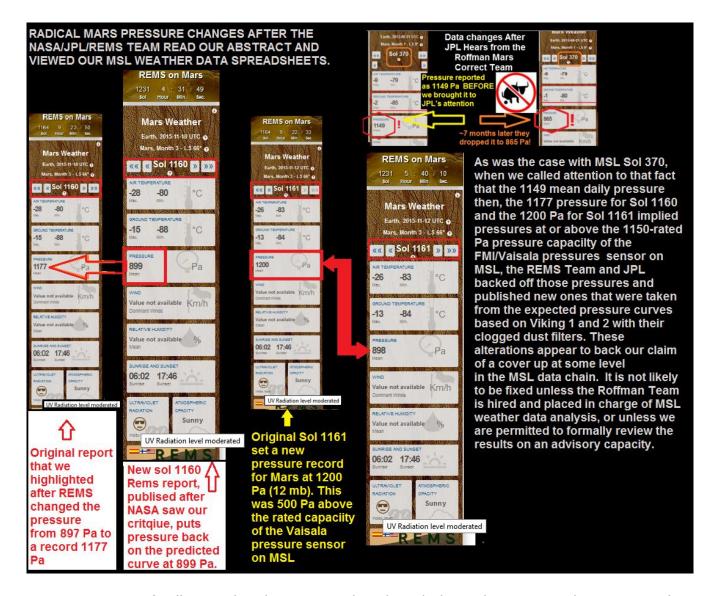


Figure 4 - On January 21, 2016 NASA finally caved and, as we predicted, took down the 1,177 and 1,200 record pressures for MSL Sols 1160 and 1161. There was an extensive review of our weather spreadsheets by IP address 161.111.124.7 from Consejo Superior de Investigaciones, Madrid, Spain on 1/20/2016 - the day before the pressures were dropped for Sols 1160 and 1161. These people manage Centro de Astrobiología which is where the REMS Team puts out the weather data for MSL.