

**Table S1.** Details of the 77 broadband WAC images from MESSENGER's low-altitude campaign identified in this study to best reveal the surfaces of Mercury's polar deposits. Commanding for the MESSENGER spacecraft was conducted to the second, and the image acquisition time listed below refers to the second on which the image was commanded and acquired.

Image file name	Image central latitude (°N)	Image central longitude (°E)	Pixel scale (m)	Spacecraft altitude (km)	Acquisition Time, UTC (YYYY-MM-DD, HH:MM:SS)
EW1044692886B	82.75	107.11	59.4	164.4	2014-06-10, 02:54:47
EW1044808119B	82.12	101.53	62.3	165.6	2014-06-11, 10:55:20
EW1045731588B	80.13	83.13	48.6	250.1	2014-06-22, 03:26:30
EW1045991826B	83.83	26.61	77.1	214.0	2014-06-25, 03:43:48
EW1046049678B	81.75	32.40	84.9	217.1	2014-06-25, 19:48:00
EW1046338858B	81.48	1.84	96.4	193.8	2014-06-29, 04:07:40
EW1046685967B	84.60	353.85	92.6	205.3	2014-07-03, 04:32:49
EW1046946306B	82.06	341.33	90.3	215.6	2014-07-06, 04:51:48
EW1047206595B	82.95	310.89	44.2	197.2	2014-07-09, 05:09:57
EW1047293379B	83.02	308.77	86.2	200.2	2014-07-10, 05:16:21
EW1047293384B	83.37	307.90	41.1	202.7	2014-07-10, 05:16:26
EW1047553765B	80.96	331.73	52.2	226.8	2014-07-13, 05:36:07
EW1048190154B	86.37	308.70	54.9	208.4	2014-07-20, 14:22:36
EW1051082730B	79.91	339.84	27.3	74.4	2014-08-23, 01:52:12
EW1051140598B	80.02	341.09	31.2	81.0	2014-08-23, 17:56:40
EW1051227377B	80.04	336.94	33.4	81.6	2014-08-24, 18:02:59
EW1051372081B	84.13	29.84	49.3	124.1	2014-08-26, 10:14:43
EW1051429970B	82.12	33.85	55.8	150.9	2014-08-27, 02:19:32
EW1051458815B	82.36	342.24	37.6	99.6	2014-08-27, 10:20:17
EW1051776921B	80.29	293.14	24.3	67.4	2014-08-31, 02:42:03
EW1051950532B	82.72	315.83	37.7	101.7	2014-09-02, 02:55:34
EW1052529039B	83.39	308.85	46.1	128.2	2014-09-08, 19:37:21
EW1052586957B	79.98	339.64	66.3	182.9	2014-09-09, 11:42:39
EW1052615878B	80.11	337.05	65.7	181.4	2014-09-09, 19:44:40
EW1052963479B	81.89	216.51	52.9	146.6	2014-09-13, 20:18:01
EW1052992620B	83.09	227.17	57.4	159.1	2014-09-14, 04:23:42
EW1053021843B	86.34	330.28	61.7	227.5	2014-09-14, 12:30:45
EW1053138179B	81.72	206.88	52.8	147.3	2014-09-15, 20:49:41
EW1053138269B	83.19	264.22	71.5	199.6	2014-09-15, 20:51:11
EW1053225572B	83.37	225.55	61.1	170.6	2014-09-16, 21:06:14
EW1053283785B	81.87	214.38	59.8	159.4	2014-09-17, 13:16:27
EW1053400172B	78.24	168.92	44.4	123.3	2014-09-18, 21:36:14
EW1053866079B	80.59	142.49	50.8	137.9	2014-09-24, 07:01:21
EW1053866171B	81.79	206.35	73.9	188.3	2014-09-24, 07:02:53
EW1055584234B	82.45	111.75	67.4	178.8	2014-10-14, 04:17:16
EW1055671623B	81.77	102.10	70.2	193.7	2014-10-15, 04:33:45
EW1058793139B	83.18	212.38	42.5	237.4	2014-11-20, 07:39:03
EW1058822722B	86.21	229.44	51.5	248.5	2014-11-20, 15:52:06
EW1058852260B	85.92	187.63	46.0	227.3	2014-11-21, 00:04:24
EW1059620770B	70.41	74.17	41.2	114.9	2014-11-29, 21:32:54
EW1061158280B	76.58	331.24	51.4	139.7	2014-12-17, 16:38:04
EW1061158416B	82.31	39.64	40.6	215.3	2014-12-17, 16:40:20
EW1061838432B	84.36	353.48	90.8	195.2	2014-12-25, 13:33:56
EW1062636818B	82.63	316.87	44.5	203.1	2015-01-03, 19:20:22
EW1063405740B	80.23	293.06	45.7	240.4	2015-01-12, 16:55:44
EW1066557878B	85.87	14.88	80.6	140.1	2015-02-18, 04:31:23
EW1066557891B	85.22	19.15	72.6	149.7	2015-02-18, 04:31:36
EW1066587748B	82.25	43.30	36.9	202.4	2015-02-18, 12:49:13
EW1066915447B	82.00	5.11	70.2	193.0	2015-02-22, 07:50:52
EW1067123879B	80.34	292.81	41.9	110.7	2015-02-24, 17:44:44
EW1067124000B	81.94	6.87	37.1	205.5	2015-02-24, 17:46:45
EW1067153761B	82.49	342.33	64.5	179.2	2015-02-25, 02:02:46
EW1067183598B	80.33	359.57	40.6	220.0	2015-02-25, 10:20:03
EW1067451658B	82.80	316.69	61.0	170.1	2015-02-28, 12:47:43
EW1067451734B	80.13	357.80	43.0	238.3	2015-02-28, 12:48:59
EW1067540944B	81.24	259.61	38.4	106.7	2015-03-01, 13:35:49
EW1068017656B	83.12	264.57	55.8	156.0	2015-03-07, 02:01:01
EW1068017709B	80.71	293.90	37.7	200.7	2015-03-07, 02:01:54
EW1068077244B	83.13	265.28	58.0	161.9	2015-03-07, 18:34:09
EW1068404967B	81.13	259.12	70.7	185.1	2015-03-11, 13:36:12
EW1068434759B	81.12	257.84	71.0	186.3	2015-03-11, 21:52:44
EW1068464481B	82.83	210.15	47.4	131.4	2015-03-12, 06:08:06
EW1068643237B	82.80	205.39	49.8	139.1	2015-03-14, 07:47:22
EW1068702828B	82.86	207.18	52.2	145.6	2015-03-15, 00:20:33
EW1068732624B	82.88	208.30	53.5	149.3	2015-03-15, 08:37:09
EW1068732711B	81.30	258.77	40.4	224.4	2015-03-15, 08:38:36
EW1068881623B	83.14	223.14	66.0	183.4	2015-03-17, 02:00:28
EW1068970874B	79.45	149.32	32.7	91.4	2015-03-18, 02:47:59
EW1069060523B	79.59	232.67	45.7	244.3	2015-03-19, 03:42:08
EW1069120199B	83.04	209.25	37.6	209.3	2015-03-19, 20:16:44
EW1069239522B	80.65	143.19	47.8	127.1	2015-03-21, 05:25:27
EW1069329232B	82.48	209.04	42.4	234.4	2015-03-22, 06:20:37
EW1069358950B	80.44	138.99	53.5	123.8	2015-03-22, 14:35:55
EW1069388807B	80.37	138.85	57.0	122.8	2015-03-22, 22:53:32
EW1069388953B	82.87	206.03	44.0	238.6	2015-03-22, 22:55:58
EW1071063795B	81.09	105.79	49.7	217.8	2015-04-11, 08:10:04
EW1071123832B	81.35	100.54	48.6	214.0	2015-04-12, 00:50:41