

Source of the Mariner Mars 1969 Images

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The author obtained a grant for the NASA Planetary Science Division Planetary Data Archive, Restoration and Technology Program (PDART) to restore the Mariner Mars 1969 Mariner 6 and 7 Far and Near Encounter images from data available at the National Space Science Data Center (NSSDC) and the Planetary Data System (PDS). Ancillary NAIF SPICE kernels were also produced to complete the archive. A CD was obtained from the NASA Planetary Data System (PDS) Imaging Node at the Caltech Jet Propulsion Laboratory (JPL) from Ms. Susan LaVoie and Ms. Amy Culver that contained the digital image archive from the Mariner Mars 1969 Mariner 6 and Mariner 7 Far and Near Encounter images of Mars. The CD contained the NSSDCA ID: PSPG-00046 archive of Mariner 6 and 7 TV reduced data records. The records were originally on 7 track tapes and were copied onto a CD-WO as part of the Science Digital Data Preservation Task (SDDPT). This is SDDPT data set code 69-030A-0019, volume ID M69_2001. See the extracts taken from the NSSDC web site, copied at the end of this document, for more details.

Edmonds and Robinson (2003) performed photometric analyses of these images and produced their own archive, including thumbnail images, as another possible source of these images:

<http://ser.sese.asu.edu/M67/mar67.html>

Processing of these images was not included in the scope of this PDART effort. The author did go to this web site, download and unzip image files but, due to his own limitations, could not open the files. However, a personal conversation with Prof. Mark Robinson, ASU, did provide very useable images in USGS ISIS format. These were distortion corrected images and this PDART task was to deal with restoring the original EDR data; therefore no further processing of this dataset was attempted.

Freeware to view the CD containing the original EDR data set described in the first paragraph:

<http://petermasek.tripod.com/mariner67.html>

was downloaded to extract 700 images from the CD that were saved as bit mapped pixel (.bmp) files, each having a 54 byte label record and an 8 bit grey scale interlaced Red, Green and Blue image within a single file. The original Far and Near Encounter images from the Mariner 6 and 7 wide and narrow angle cameras were each taken through a single filter to produce monochromatic images. These monochrome images are repeated three times in the Red, Green, Blue interlaced images within each .bmp file. Table 1 gives the details of these extracted images with:

IMAGE #: the file order number within the CCD
PIC ID: the file name on the CD

PICNO: the Mariner Mars 1969 image name as Mariner//Encounter//Number:
Mariner = 6 or 7; Encounter = F – far or N – Near; Number = sequence
number.

TYP: the type of file: CAV – Composite Analog Video; DV – Digital Video; ETE –
Every Twenty-Eighth.

PRC: Level of processing: RAW – raw / original image; DC – Distortion Corrected;
MP – map projected; UK – unknown

SAMPLES: the number of samples in each interlaced RGB image

LINES: the number of lines in each interlaced RGB image

LABEL BYTES: number of bytes in the label record preceding the interlaced RGB images

FILE SIZE: total number of bytes in the image file including the Label Record and the 3
RGB interlaced 8-bit/pixel images

The image types (TYP) are defined by Rindfleisch, *et. al.*, 1971 as:

“The CAV pictures consist of the fully sampled raster with each picture element digitized to 6 significant bits. Prior to the digital encoding of the CAV pictures, the amplitude-modulated camera output signal was processed through an automatic-gain-control amplifier (AGC) and a cubing amplifier to emphasize low-contrast detail, and was recorded on the analog tape recorder. The dynamic amplifier gains were not recorded.

The DV pictures consist of every seventh picture element along each scan line linearly encoded to 8 significant bits but with the 2 most significant bits (MSB) truncated prior to transmission. In a separate engineering-telemetry data stream, statistical information was transmitted for every block of 32 television lines indicating independently the dominant state for each of the MSB's. Of the 134 possible DN elements per line, the central 26 were used to transmit non-video science data thus forming a 'data bar' in the middle of the DV pictures.

The ETE pictures consist of every twenty-eighth picture element along each scan line linearly encoded effectively to 6 significant bits, but with the two MSB's truncated prior to transmission. These ETE data provide coverage in the 'data bar' of the DV pictures and, together with the DV data, give information relative to the nonlinear effects of the AGC and cubing amplifiers on the CAV data. The time constants of the AGC amplifier were chosen so that the gain would change only very slowly over the every-seventh spacing of the DV samples.”

NOTE: the author could not find a definition for “ETE” and refers to these as “Electronically Telemetered Elements”.

As each image was extracted from the CD and displayed on the computer monitor, a best efforts attempt was made to tie the CD file name (PIC ID) to a Mariner 6 or 7 Near or Far Encounter Picture Number (PICNO). This was accomplished by looking at the hardcopy images in Collins, 1971, and visually matching the hardcopy images with PICNO's with the image displayed on the computer monitor. The reference also gives the color filter and shutter direction associated with the images. The DV and ETE image PICNOs were selected that “best” matched the CAV images. It is seen that PICNOs 7F02, 7F34 and 7F68 are not included in the CD archive and IMAGE #'s 412 – 517 were not matched. These are all Digital Video (DV) images where only

every 7th sample in each line was telemetered to Earth. There is a high probability that these images were taken and played back to Earth in real-time and the associated full frame images were not received on Earth and therefore not produced.

The Mariner 7 onboard Tape Recorders could only hold 33 full images so the last image of a stored sequence, 7F34 and 7F64, were lost. It is not known why image 7N02 was not on the CD. It is noted that Campbell, 1970 gives timetags, spacecraft positions and platform pointings for all images except 7F00. The Collins document states that 7F00 was taken about 5 hours before 7F01, therefore image timetag and spacecraft position data were produced at this approximate time.

It is seen that the raw Composite Analog Video .bmp images have 704 lines and 948 samples per line. The flight vidicons produced 945 sample x 704 line images. BMP file format conventions require the number of lines and samples per line to be divisible by 4; therefore the software that created the BMP files, from the PDS-supplied CD, added three blank samples at the end of each line to meet this constraint. Only CAV images 6F01 – 6F49, 6N01-6N31, 7F00-7F93 and 7N01-7N32 were included in the scope of the PDART task; however the additional 500 images were extracted from the CD, the DV and ETE images converted to full-frame images, and PICNO's were associated with the CD file names on a best efforts basis.

Table 1. Contents of the Mariner Mars 1969 CD image archive

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*****
MARINER MARS 1969 .bmp FORMATTED IMAGE LIST
*****

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IMAGE #	PIC ID	PICNO	TYP	PRC	# SAMPLES	# LINES	#LABEL BYTES	FILE SIZE
609	RBL_012_001	6F01	CAV	RW	948	704	54	2002230
610	RBL_012_002	6F02	CAV	RW	948	704	54	2002230
611	RBL_012_003	6F03	CAV	RW	948	704	54	2002230
612	RBL_012_004	6F04	CAV	RW	948	704	54	2002230
613	RBL_012_005	6F05	CAV	RW	948	704	54	2002230
614	RBL_012_006	6F06	CAV	RW	948	704	54	2002230
615	RBL_012_007	6F07	CAV	RW	948	704	54	2002230
616	RBL_012_008	6F08	CAV	RW	948	704	54	2002230
617	RBL_012_009	6F09	CAV	RW	948	704	54	2002230
618	RBL_012_010	6F10	CAV	RW	948	704	54	2002230
619	RBL_012_011	6F11	CAV	RW	948	704	54	2002230
620	RBL_012_012	6F12	CAV	RW	948	704	54	2002230
621	RBL_012_013	6F13	CAV	RW	948	704	54	2002230
622	RBL_012_014	6F14	CAV	RW	948	704	54	2002230
623	RBL_012_015	6F15	CAV	RW	948	704	54	2002230
624	RBL_012_016	6F16	CAV	RW	948	704	54	2002230
593	RBL_011_001	6F17	CAV	RW	948	704	54	2002230
594	RBL_011_002	6F18	CAV	RW	948	704	54	2002230
595	RBL_011_003	6F19	CAV	RW	948	704	54	2002230
596	RBL_011_004	6F20	CAV	RW	948	704	54	2002230
597	RBL_011_005	6F21	CAV	RW	948	704	54	2002230
598	RBL_011_006	6F22	CAV	RW	948	704	54	2002230
599	RBL_011_007	6F23	CAV	RW	948	704	54	2002230
600	RBL_011_008	6F24	CAV	RW	948	704	54	2002230
601	RBL_011_009	6F25	CAV	RW	948	704	54	2002230
602	RBL_011_010	6F26	CAV	RW	948	704	54	2002230
603	RBL_011_011	6F27	CAV	RW	948	704	54	2002230
604	RBL_011_012	6F28	CAV	RW	948	704	54	2002230
605	RBL_011_013	6F29	CAV	RW	948	704	54	2002230
606	RBL_011_014	6F30	CAV	RW	948	704	54	2002230
607	RBL_011_015	6F31	CAV	RW	948	704	54	2002230
608	RBL_011_016	6F32	CAV	RW	948	704	54	2002230
669	RBL_022_001	6F33	CAV	RW	948	704	54	2002230
670	RBL_022_002	6F34	CAV	RW	948	704	54	2002230



671	RBL_022_003	6F35	CAV	RW	948	704	54	2002230
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673	RBL_022_005	6F37	CAV	RW	948	704	54	2002230
674	RBL_022_006	6F38	CAV	RW	948	704	54	2002230
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677	RBL_022_009	6F41	CAV	RW	948	704	54	2002230
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679	RBL_022_011	6F43	CAV	RW	948	704	54	2002230
680	RBL_022_012	6F44	CAV	RW	948	704	54	2002230
681	RBL_022_013	6F45	CAV	RW	948	704	54	2002230
682	RBL_022_014	6F46	CAV	RW	948	704	54	2002230
683	RBL_022_015	6F47	CAV	RW	948	704	54	2002230
684	RBL_022_016	6F48	CAV	RW	948	704	54	2002230
592	RBL_010_001	6F49	CAV	RW	948	704	54	2002230
561	RBL_006_001	7F00	CAV	RW	948	704	54	2002230
562	RBL_006_002	7F01	CAV	RW	948	704	54	2002230
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575	RBL_006_015	7F15	CAV	RW	948	704	54	2002230
576	RBL_006_016	7F16	CAV	RW	948	704	54	2002230
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642	RBL_020_005	7F21	CAV	RW	948	704	54	2002230
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644	RBL_020_007	7F23	CAV	RW	948	704	54	2002230
645	RBL_020_008	7F24	CAV	RW	948	704	54	2002230
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652	RBL_020_015	7F31	CAV	RW	948	704	54	2002230
653	RBL_020_016	7F32	CAV	RW	948	704	54	2002230
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629	RBL_019_005	7F38	CAV	RW	948	704	54	2002230
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689	RBL_026_005	7F51	CAV	RW	948	704	54	2002230
690	RBL_026_006	7F52	CAV	RW	948	704	54	2002230
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696	RBL_026_012	7F58	CAV	RW	948	704	54	2002230



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699	RBL_026_015	7F61	CAV	RW	948	704	54	2002230
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580	RBL_009_004	7F66	CAV	RW	948	704	54	2002230
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2	69_011_002	6N02	DV	RW	816	704	54	1723446
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27	69_021_002	7N02	DV	RW	816	704	54	1723446
28	69_021_003	7N03	DV	RW	816	704	54	1723446
29	69_021_004	7N04	DV	RW	816	704	54	1723446
30	69_021_005	7N05	DV	RW	816	704	54	1723446
31	69_021_006	7N06	DV	RW	816	704	54	1723446
32	69_021_007	7N07	DV	RW	816	704	54	1723446
33	69_021_008	7N08	DV	RW	816	704	54	1723446
34	69_021_009	7N09	DV	RW	816	704	54	1723446
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36	69_021_011	7N11	DV	RW	816	704	54	1723446
37	69_021_012	7N12	DV	RW	816	704	54	1723446
38	69_021_013	7N13	DV	RW	816	704	54	1723446



39	69_021_014	7N14	DV	RW	816	704	54	1723446
40	69_021_015	7N15	DV	RW	816	704	54	1723446
41	69_021_016	7N16	DV	RW	816	704	54	1723446
42	69_021_017	7N17	DV	RW	816	704	54	1723446
43	69_021_018	7N18	DV	RW	816	704	54	1723446
44	69_021_019	7N19	DV	RW	816	704	54	1723446
45	69_021_020	7N20	DV	RW	816	704	54	1723446
46	69_031_001	7N21	DV	RW	816	704	54	1723446
47	69_031_002	7N22	DV	RW	816	704	54	1723446
48	69_031_003	7N23	DV	RW	816	704	54	1723446
49	69_031_004	7N24	DV	RW	816	704	54	1723446
50	69_031_005	7N25	DV	RW	816	704	54	1723446
51	69_031_006	7N26	DV	RW	816	704	54	1723446
52	69_031_007	7N27	DV	RW	816	704	54	1723446
53	69_031_008	7N28	DV	RW	816	704	54	1723446
54	69_031_009	7N29	DV	RW	816	704	54	1723446
55	69_031_010	7N30	DV	RW	816	704	54	1723446
56	69_031_011	7N31	DV	RW	816	704	54	1723446
57	69_041_001	6N01	CAV	DC	1000	772	54	2316054
58	69_041_002	6N02	CAV	DC	1000	772	54	2316054
59	69_041_003	6N03	CAV	DC	1000	772	54	2316054
60	69_041_004	6N04	CAV	DC	1000	772	54	2316054
61	69_041_005	6N05	CAV	DC	1000	772	54	2316054
62	69_041_006	6N06	CAV	DC	1000	772	54	2316054
63	69_041_007	6N07	CAV	DC	1000	772	54	2316054
64	69_041_008	6N08	CAV	DC	1000	772	54	2316054
65	69_041_009	6N09	CAV	DC	1000	772	54	2316054
66	69_041_010	6N10	CAV	DC	1000	772	54	2316054
67	69_041_011	6N11	CAV	DC	1000	772	54	2316054
68	69_041_012	6N12	CAV	DC	1000	772	54	2316054
69	69_041_013	6N13	CAV	DC	1000	772	54	2316054
70	69_051_001	6N14	CAV	DC	1000	772	54	2316054
71	69_051_002	6N15	CAV	DC	1000	772	54	2316054
72	69_051_003	6N16	CAV	DC	1000	772	54	2316054
73	69_051_004	6N17	CAV	DC	1000	772	54	2316054
74	69_051_005	6N18	CAV	DC	1000	772	54	2316054
75	69_051_006	6N19	CAV	DC	1000	772	54	2316054
76	69_051_007	6N20	CAV	DC	1000	772	54	2316054
77	69_051_008	6N21	CAV	DC	1000	772	54	2316054
78	69_051_009	6N22	CAV	DC	1000	772	54	2316054
79	69_051_010	6N23	CAV	DC	1000	772	54	2316054
80	69_051_011	6N24	CAV	DC	1000	772	54	2316054
81	69_051_012	6N25	CAV	DC	1000	772	54	2316054
82	69_061_001	7N01	CAV	DC	1000	772	54	2316054
83	69_061_002	7N02	CAV	DC	1000	772	54	2316054
84	69_061_003	7N03	CAV	DC	1000	772	54	2316054
85	69_061_004	7N04	CAV	DC	1000	772	54	2316054
86	69_061_005	7N05	CAV	DC	1000	772	54	2316054
87	69_061_006	7N06	CAV	DC	1000	772	54	2316054
88	69_061_007	7N07	CAV	DC	1000	772	54	2316054
89	69_061_008	7N08	CAV	DC	1000	772	54	2316054
90	69_061_009	7N09	CAV	DC	1000	772	54	2316054
91	69_061_010	7N10	CAV	DC	1000	772	54	2316054
92	69_061_011	7N11	CAV	DC	1000	772	54	2316054
93	69_061_012	7N12	CAV	DC	1000	772	54	2316054
94	69_061_013	7N13	CAV	DC	1000	772	54	2316054
95	69_071_001	7N14	CAV	DC	1000	772	54	2316054
96	69_071_002	7N15	CAV	DC	1000	772	54	2316054
97	69_071_003	7N16	CAV	DC	1000	772	54	2316054
98	69_071_004	7N17	CAV	DC	1000	772	54	2316054
99	69_071_005	7N18	CAV	DC	1000	772	54	2316054
100	69_071_006	7N19	CAV	DC	1000	772	54	2316054
101	69_071_007	7N20	CAV	DC	1000	772	54	2316054
102	69_071_008	7N21	CAV	DC	1000	772	54	2316054
103	69_071_009	7N22	CAV	DC	1000	772	54	2316054
104	69_071_010	7N23	CAV	DC	1000	772	54	2316054
105	69_071_011	7N24	CAV	DC	1000	772	54	2316054
106	69_071_012	7N25	CAV	DC	1000	772	54	2316054
107	69_071_013	7N26	CAV	DC	1000	772	54	2316054
108	69_081_001	7N27	CAV	DC	1000	772	54	2316054
109	69_081_002	7N28	CAV	DC	1000	772	54	2316054
110	69_081_003	7N29	CAV	DC	1000	772	54	2316054



111	69_081_004	7N30	CAV	DC	1000	772	54	2316054
112	69_081_005	7N31	CAV	DC	1000	772	54	2316054
113	69_081_006	7N32	CAV	DC	1000	772	54	2316054
114	69_091_001	7N01	CAV	RW	948	704	54	2002230
115	69_091_002	7N02	CAV	RW	948	704	54	2002230
116	69_091_003	7N03	CAV	RW	948	704	54	2002230
117	69_091_004	7N04	CAV	RW	948	704	54	2002230
118	69_091_005	7N05	CAV	RW	948	704	54	2002230
119	69_091_006	7N06	CAV	RW	948	704	54	2002230
120	69_091_007	7N07	CAV	RW	948	704	54	2002230
121	69_091_008	7N08	CAV	RW	948	704	54	2002230
122	69_091_009	7N09	CAV	RW	948	704	54	2002230
123	69_091_010	7N10	CAV	RW	948	704	54	2002230
124	69_091_011	7N11	CAV	RW	948	704	54	2002230
125	69_091_012	7N12	CAV	RW	948	704	54	2002230
126	69_091_013	7N13	CAV	RW	948	704	54	2002230
127	69_091_014	7N14	CAV	RW	948	704	54	2002230
128	69_091_015	7N15	CAV	RW	948	704	54	2002230
129	69_091_016	7N16	CAV	RW	948	704	54	2002230
130	69_101_001	7N17	CAV	DC	948	704	54	2002230
131	69_101_002	7N18	CAV	DC	948	704	54	2002230
132	69_101_003	7N19	CAV	DC	948	704	54	2002230
133	69_101_004	7N20	CAV	DC	948	704	54	2002230
134	69_101_005	7N21	CAV	DC	948	704	54	2002230
135	69_101_006	7N22	CAV	DC	948	704	54	2002230
136	69_101_007	7N23	CAV	DC	948	704	54	2002230
137	69_101_008	7N24	CAV	DC	948	704	54	2002230
138	69_101_009	7N25	CAV	DC	948	704	54	2002230
139	69_101_010	7N26	CAV	DC	948	704	54	2002230
140	69_101_011	7N27	CAV	DC	948	704	54	2002230
141	69_101_012	7N28	CAV	DC	948	704	54	2002230
142	69_101_013	7N29	CAV	DC	948	704	54	2002230
143	69_101_014	7N30	CAV	DC	948	704	54	2002230
144	69_101_015	7N31	CAV	DC	948	704	54	2002230
145	69_111_001	6N01	CAV	DC	948	704	54	2002230
146	69_111_002	6N02	CAV	DC	948	704	54	2002230
147	69_111_003	6N03	CAV	DC	948	704	54	2002230
148	69_111_004	6N04	CAV	DC	948	704	54	2002230
149	69_111_005	6N05	CAV	DC	948	704	54	2002230
150	69_111_006	6N06	CAV	DC	948	704	54	2002230
151	69_111_007	6N07	CAV	DC	948	704	54	2002230
152	69_111_008	6N06	CAV	DC	948	704	54	2002230
153	69_111_009	6N09	CAV	DC	948	704	54	2002230
154	69_111_010	6N10	CAV	DC	948	704	54	2002230
155	69_111_011	6N11	CAV	DC	948	704	54	2002230
156	69_111_012	6N12	CAV	DC	948	704	54	2002230
157	69_111_013	6N13	CAV	DC	948	704	54	2002230
158	69_121_001	6N14	CAV	DC	948	704	54	2002230
159	69_121_002	6N15	CAV	DC	948	704	54	2002230
160	69_121_003	6N16	CAV	DC	948	704	54	2002230
161	69_121_004	6N17	CAV	DC	948	704	54	2002230
162	69_121_005	6N18	CAV	DC	948	704	54	2002230
163	69_121_006	6N19	CAV	DC	948	704	54	2002230
164	69_121_007	6N20	CAV	DC	948	704	54	2002230
165	69_121_008	6N21	CAV	DC	948	704	54	2002230
166	69_121_009	6N22	CAV	DC	948	704	54	2002230
167	69_121_010	6N23	CAV	DC	948	704	54	2002230
168	69_121_011	6N24	CAV	DC	948	704	54	2002230
169	69_121_012	6N24	CAV	DC	948	704	54	2002230
170	69_131_001	6N01	ETE	RW	816	704	54	1723446
171	69_131_002	6N02	ETE	RW	816	704	54	1723446
172	69_131_003	6N03	ETE	RW	816	704	54	1723446
173	69_131_004	6N04	ETE	RW	816	704	54	1723446
174	69_131_005	6N05	ETE	RW	816	704	54	1723446
175	69_131_006	6N06	ETE	RW	816	704	54	1723446
176	69_131_007	6N07	ETE	RW	816	704	54	1723446
177	69_131_008	6N08	ETE	RW	816	704	54	1723446
178	69_131_009	6N09	ETE	RW	816	704	54	1723446
179	69_131_010	6N10	ETE	RW	816	704	54	1723446
180	69_131_011	6N11	ETE	RW	816	704	54	1723446
181	69_131_012	6N12	ETE	RW	816	704	54	1723446
182	69_131_013	6N13	ETE	RW	816	704	54	1723446



183	69_131_014	6N14	ETE	RW	816	704	54	1723446
184	69_131_015	6N15	ETE	RW	816	704	54	1723446
185	69_131_016	6N16	ETE	RW	816	704	54	1723446
186	69_131_017	6N17	ETE	RW	816	704	54	1723446
187	69_131_018	6N18	ETE	RW	816	704	54	1723446
188	69_131_019	6N19	ETE	RW	816	704	54	1723446
189	69_131_020	6N20	ETE	RW	816	704	54	1723446
190	69_131_021	6N21	ETE	RW	816	704	54	1723446
191	69_131_022	6N22	ETE	RW	816	704	54	1723446
192	69_131_023	6N23	ETE	RW	816	704	54	1723446
193	69_131_024	6N24	ETE	RW	816	704	54	1723446
194	69_131_025	6N25	ETE	RW	816	704	54	1723446
195	69_141_001	7N01	ETE	RW	816	704	54	1723446
196	69_141_002	7N02	ETE	RW	816	704	54	1723446
197	69_141_003	7N03	ETE	RW	816	704	54	1723446
198	69_141_004	7N04	ETE	RW	816	704	54	1723446
199	69_141_005	7N05	ETE	RW	816	704	54	1723446
200	69_141_006	7N06	ETE	RW	816	704	54	1723446
201	69_141_007	7N07	ETE	RW	816	704	54	1723446
202	69_141_008	7N08	ETE	RW	816	704	54	1723446
203	69_141_009	7N09	ETE	RW	816	704	54	1723446
204	69_141_010	7N10	ETE	RW	816	704	54	1723446
205	69_141_011	7N11	ETE	RW	816	704	54	1723446
206	69_141_012	7N12	ETE	RW	816	704	54	1723446
207	69_141_013	7N13	ETE	RW	816	704	54	1723446
208	69_141_014	7N14	ETE	RW	816	704	54	1723446
209	69_141_015	7N15	ETE	RW	816	704	54	1723446
210	69_141_016	7N16	ETE	RW	816	704	54	1723446
211	69_141_017	7N17	ETE	RW	816	704	54	1723446
212	69_141_018	7N18	ETE	RW	816	704	54	1723446
213	69_141_019	7N19	ETE	RW	816	704	54	1723446
214	69_141_020	7N20	ETE	RW	816	704	54	1723446
215	69_141_021	7N21	ETE	RW	816	704	54	1723446
216	69_141_022	7N22	ETE	RW	816	704	54	1723446
217	69_141_023	7N23	ETE	RW	816	704	54	1723446
218	69_141_024	7N24	ETE	RW	816	704	54	1723446
219	69_141_025	7N25	ETE	RW	816	704	54	1723446
220	69_141_026	7N26	ETE	RW	816	704	54	1723446
221	69_141_027	7N27	ETE	RW	816	704	54	1723446
222	69_141_028	7N28	ETE	RW	816	704	54	1723446
223	69_141_029	7N29	ETE	RW	816	704	54	1723446
224	69_141_030	7N30	ETE	RW	816	704	54	1723446
225	69_141_031	7N31	ETE	RW	816	704	54	1723446
233	69_191_004	7N04	CAV	DC	956	776	54	2234934
234	69_191_005	7N05	CAV	DC	960	776	54	2234934
235	69_191_006	7N06	CAV	DC	956	776	54	2234934
236	69_191_007	7N07	CAV	DC	960	776	54	2234934
237	69_191_008	7N08	CAV	DC	956	776	54	2234934
238	69_191_009	7N09	CAV	DC	960	776	54	2234934
239	69_191_010	7N10	CAV	DC	956	776	54	2234934
240	69_191_011	7N11	CAV	DC	960	776	54	2234934
241	69_191_012	7N12	CAV	DC	956	776	54	2234934
242	69_191_013	7N13	CAV	DC	960	776	54	2234934
243	69_201_001	7N14	CAV	DC	956	704	54	2019126
244	69_201_002	7N15	CAV	DC	960	776	54	2234934
245	69_201_003	7N16	CAV	DC	956	776	54	2234934
246	69_201_004	7N17	CAV	DC	960	776	54	2234934
247	69_201_005	7N18	CAV	DC	956	776	54	2234934
248	69_201_006	7N19	CAV	DC	960	776	54	2234934
249	69_201_007	7N20	CAV	DC	956	776	54	2234934
250	69_201_008	7N21	CAV	DC	960	776	54	2234934
251	69_201_009	7N22	CAV	DC	956	776	54	2234934
252	69_201_010	7N23	CAV	DC	960	776	54	2234934
253	69_201_011	7N24	CAV	DC	956	776	54	2234934
254	69_201_012	7N25	CAV	DC	960	776	54	2234934
255	69_201_013	7N26	CAV	DC	956	776	54	2234934
256	69_211_001	7N27	CAV	DC	960	776	54	2234934
257	69_211_002	7N28	CAV	DC	948	704	54	2002230
258	69_211_003	7N29	UNK	UK	970	704	54	2002230
259	69_211_004	7N29	UNK	UK	952	1300	54	3712854
260	69_211_005	7N30	UNK	UK	976	704	54	2002230
261	69_221_001	6N01	CAV	DC	976	776	54	2272182



262	69_221_002	6N02	CAV	DC	960	776	54	2234934
263	69_221_003	6N03	CAV	DC	976	776	54	2272182
264	69_221_004	6N04	CAV	DC	960	776	54	2272182
265	69_221_005	6N05	CAV	DC	976	776	54	2272182
266	69_221_006	6N06	CAV	DC	960	776	54	2272182
267	69_221_007	6N07	CAV	DC	976	776	54	2272182
268	69_221_008	6N08	CAV	DC	960	776	54	2272182
269	69_221_009	6N09	CAV	DC	976	776	54	2272182
270	69_221_010	6N10	CAV	DC	960	776	54	2272182
271	69_221_011	6N11	CAV	DC	976	776	54	2272182
271	69_221_012	6N12	CAV	DC	960	776	54	2272182
273	69_221_013	6N13	CAV	DC	976	776	54	2272182
274	69_231_001	6N14	CAV	DC	960	776	54	2234934
275	69_231_002	6N15	CAV	DC	976	776	54	2234934
276	69_231_003	6N16	CAV	DC	960	776	54	2234934
277	69_231_004	6N17	CAV	DC	976	776	54	2234934
278	69_231_005	6N18	CAV	DC	960	776	54	2234934
279	69_231_006	6N19	CAV	DC	976	776	54	2234934
280	69_231_007	6N20	CAV	DC	960	776	54	2234934
281	69_231_008	6N21	CAV	DC	976	776	54	2234934
282	69_231_009	6N22	CAV	DC	960	776	54	2234934
283	69_231_010	6N23	CAV	DC	976	776	54	2234934
284	69_231_011	6N24	CAV	DC	960	776	54	2234934
285	69_231_012	6N25	CAV	DC	976	776	54	2234934
286	69_261_001	6N01	CAV	DC	976	776	54	2272182
287	69_261_002	6N02	CAV	DC	960	776	54	2234934
288	69_261_003	6N03	CAV	DC	976	776	54	2234934
289	69_261_004	6N04	CAV	DC	960	776	54	2234934
290	69_261_005	6N05	CAV	DC	976	776	54	2234934
291	69_261_006	6N06	CAV	DC	960	776	54	2234934
292	69_261_007	6N07	CAV	DC	976	776	54	2234934
293	69_261_008	6N08	CAV	DC	960	776	54	2234934
294	69_261_009	6N09	CAV	DC	976	776	54	2234934
295	69_261_010	6N10	CAV	DC	960	776	54	2234934
296	69_261_011	6N11	CAV	DC	976	776	54	2234934
297	69_261_012	6N12	CAV	DC	960	776	54	2234934
298	69_261_013	6N13	CAV	DC	976	776	54	2234934
299	69_271_001	6N14	CAV	DC	960	776	54	2234934
300	69_271_002	6N15	CAV	DC	976	776	54	2272182
301	69_271_003	6N16	CAV	DC	960	776	54	2272182
302	69_271_004	6N17	CAV	DC	976	776	54	2272182
303	69_271_005	6N18	CAV	DC	960	776	54	2272182
304	69_271_006	6N19	CAV	DC	976	776	54	2272182
305	69_271_007	6N20	CAV	DC	960	776	54	2272182
306	69_271_008	6N21	CAV	DC	976	776	54	2272182
307	69_271_009	6N22	CAV	DC	960	776	54	2272182
308	69_271_010	6N23	CAV	DC	976	776	54	2272182
309	69_271_011	6N24	CAV	DC	960	776	54	2272182
310	69_271_012	6N25	CAV	DC	976	776	54	2272182
311	69_291_001	6N01	CAV	MP	1000	772	54	2316054
312	69_291_002	6N03	CAV	MP	1000	772	54	2316054
313	69_291_003	6N05	CAV	MP	752	776	54	1750710
314	69_291_004	6N07	CAV	MP	1000	772	54	2316054
315	69_291_005	6N09	CAV	MP	700	952	54	1999254
316	69_291_006	6N11	CAV	MP	804	1028	54	2479590
317	69_291_007	6N13	CAV	MP	876	912	54	2396790
318	69_291_008	6N15	CAV	MP	1000	772	54	2316054
319	69_291_009	6N17	CAV	MP	852	852	54	2177766
320	69_291_010	6N19	CAV	MP	864	752	54	1949238
321	69_291_011	6N21	CAV	MP	952	1300	54	3712854
322	69_291_012	6N23	CAV	MP	1000	772	54	2316054
323	69_301_001	7N01	CAV	MP	804	1028	54	2479590
324	69_301_002	7N03	CAV	MP	700	952	54	1999254
325	69_301_003	7N05	CAV	MP	600	800	54	1440054
326	69_301_004	7N07	CAV	MP	600	800	54	1440054
327	69_301_005	7N09	CAV	MP	804	1028	54	2479590
328	69_301_006	7N11	CAV	MP	1000	772	54	2316054
329	69_301_007	7N12	CAV	MP	876	912	54	2396790
330	69_301_008	7N13	CAV	MP	952	1300	54	3712854
331	69_301_009	7N19	CAV	MP	1024	1504	54	4620342
332	69_311_001	7N17	CAV	MP	1000	1328	54	3984054
333	69_311_002	7N19	CAV	MP	1000	1352	54	4056054



334	69_311_003	7N21	CAV	MP	1000	1000	54	3000054
335	69_311_004	7N23	CAV	MP	1000	1000	54	3000054
340	69_321_001	7N01	CAV	MP	804	1028	54	2479590
341	69_321_002	7N03	CAV	MP	700	952	54	1999254
342	69_321_003	7N05	CAV	MP	600	800	54	1440054
343	69_321_004	7N07	CAV	MP	600	800	54	1440054
344	69_321_005	7N09	CAV	MP	804	1028	54	2479590
345	69_321_006	7N11	CAV	MP	1000	900	54	2700054
346	69_321_007	7N13	CAV	MP	876	912	54	2396790
347	69_321_008	7N15	CAV	MP	952	1300	54	3712854
348	69_331_001	7N17	CAV	MP	1000	1328	54	3984054
349	69_331_002	7N19	CAV	MP	1000	1352	54	4056054
350	69_331_003	7N21	CAV	MP	1000	1000	54	3000054
351	69_331_004	7N23	CAV	MP	852	852	54	2177766
352	69_331_005	7N25	CAV	MP	952	1300	54	3712854
353	69_331_006	7N27	CAV	MP	752	776	54	1750710
354	69_331_007	7N29	CAV	MP	804	1028	54	2479590
355	69_331_008	7N31	CAV	MP	700	952	54	1999254
356	69_341_001	6N01	CAV	DC	1000	772	54	2316054
357	69_341_002	6N02	CAV	DC	1000	772	54	2316054
358	69_341_003	6N03	CAV	DC	1000	772	54	2316054
359	69_341_004	6N04	CAV	DC	1000	772	54	2316054
360	69_341_005	6N05	CAV	DC	1000	772	54	2316054
361	69_341_006	6N06	CAV	DC	1000	772	54	2316054
362	69_341_007	6N07	CAV	DC	1000	772	54	2316054
363	69_341_008	6N08	CAV	DC	1000	772	54	2316054
364	69_341_009	6N09	CAV	DC	1000	772	54	2316054
365	69_341_010	6N10	CAV	DC	1000	772	54	2316054
366	69_341_011	6N11	CAV	DC	1000	772	54	2316054
367	69_341_012	6N12	CAV	DC	1000	772	54	2316054
368	69_341_013	6N13	CAV	DC	1000	772	54	2316054
369	69_351_001	6N14	CAV	DC	1000	772	54	2316054
370	69_351_002	6N15	CAV	DC	1000	772	54	2316054
371	69_351_003	6N16	CAV	DC	1000	772	54	2316054
372	69_351_004	6N17	CAV	DC	1000	772	54	2316054
373	69_351_005	6N18	CAV	DC	1000	772	54	2316054
374	69_351_006	6N19	CAV	DC	1000	772	54	2316054
375	69_351_007	6N20	CAV	DC	1000	772	54	2316054
376	69_351_008	6N21	CAV	DC	1000	772	54	2316054
377	69_351_009	6N22	CAV	DC	1000	772	54	2316054
378	69_351_010	6N23	CAV	DC	1000	772	54	2316054
379	69_351_011	6N24	CAV	DC	1000	772	54	2316054
380	69_351_012	6N25	CAV	DC	1000	772	54	2316054
381	69_361_001	7N01	CAV	DC	1000	772	54	2316054
382	69_361_002	7N02	CAV	DC	1000	772	54	2316054
383	69_361_003	7N03	CAV	DC	1000	772	54	2316054
384	69_361_004	7N04	CAV	DC	1000	772	54	2316054
385	69_361_005	7N05	CAV	DC	1000	772	54	2316054
386	69_361_006	7N06	CAV	DC	1000	772	54	2316054
387	69_361_007	7N07	CAV	DC	1000	772	54	2316054
388	69_361_008	7N08	CAV	DC	1000	772	54	2316054
389	69_361_009	7N09	CAV	DC	1000	772	54	2316054
390	69_361_010	7N10	CAV	DC	1000	772	54	2316054
391	69_361_011	7N11	CAV	DC	1000	772	54	2316054
392	69_361_012	7N12	CAV	DC	1000	772	54	2316054
393	69_361_013	7N13	CAV	DC	1000	772	54	2316054
394	69_371_001	7N14	CAV	DC	1000	772	54	2316054
395	69_371_002	7N15	CAV	DC	1000	772	54	2316054
396	69_371_003	7N16	CAV	DC	1000	772	54	2316054
397	69_371_004	7N17	CAV	DC	1000	772	54	2316054
398	69_371_005	7N18	CAV	DC	1000	772	54	2316054
399	69_371_006	7N19	CAV	DC	1000	772	54	2316054
400	69_371_007	7N20	CAV	DC	1000	772	54	2316054
401	69_371_008	7N21	CAV	DC	1000	772	54	2316054
402	69_371_009	7N22	CAV	DC	1000	772	54	2316054
403	69_371_010	7N23	CAV	DC	1000	772	54	2316054
404	69_371_011	7N24	CAV	DC	1000	772	54	2316054
405	69_371_012	7N25	CAV	DC	1000	772	54	2316054
406	69_371_013	7N26	CAV	DC	1000	772	54	2316054
407	69_381_001	7N27	CAV	DC	1000	772	54	2316054
408	69_381_002	7N28	CAV	DC	1000	772	54	2316054
409	69_381_003	7N29	CAV	DC	1000	772	54	2316054



410	69_381_004	7N30	CAV	DC	1000	772	54	2316054
411	69_381_005	7N31	CAV	DC	1000	772	54	2316054
412	ED_006_001	7FXX	DV	RW	816	704	54	1723446
413	ED_006_002	7FXX	DV	RW	816	704	54	1723446
414	ED_006_003	7FXX	DV	RW	816	704	54	1723446
415	ED_006_004	7FXX	DV	RW	816	704	54	1723446
416	ED_006_005	7FXX	DV	RW	816	704	54	1723446
417	ED_006_006	7FXX	DV	RW	816	704	54	1723446
418	ED_006_007	7FXX	DV	RW	816	704	54	1723446
419	ED_006_008	7FXX	DV	RW	816	704	54	1723446
420	ED_006_009	7FXX	DV	RW	816	704	54	1723446
421	ED_006_010	7FXX	DV	RW	816	704	54	1723446
422	ED_006_011	7FXX	DV	RW	816	704	54	1723446
423	ED_006_012	7FXX	DV	RW	816	704	54	1723446
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426	ED_006_015	7FXX	DV	RW	816	704	54	1723446
427	ED_006_016	7FXX	DV	RW	816	704	54	1723446
428	ED_006_017	7FXX	DV	RW	816	704	54	1723446
429	ED_006_018	7FXX	DV	RW	816	704	54	1723446
430	ED_006_019	7FXX	DV	RW	816	704	54	1723446
431	ED_006_020	7FXX	DV	RW	816	704	54	1723446
432	ED_006_021	7FXX	DV	RW	816	704	54	1723446
433	ED_006_022	7FXX	DV	RW	816	704	54	1723446
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439	ED_012_003	7NXX	DV	RW	816	704	54	1723446
440	ED_012_004	7NXX	DV	RW	816	704	54	1723446
441	ED_012_005	7NXX	DV	RW	816	704	54	1723446
442	ED_012_006	7NXX	DV	RW	816	704	54	1723446
443	ED_012_007	7NXX	DV	RW	816	704	54	1723446
444	ED_012_008	7NXX	DV	RW	816	704	54	1723446
445	ED_012_009	7NXX	DV	RW	816	704	54	1723446
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447	ED_014_002	7N35	DV	RW	816	704	54	1723446
448	ED_014_003	7N35	DV	RW	816	704	54	1723446
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450	ED_014_005	7N35	DV	RW	816	704	54	1723446
451	ED_014_006	7N35	DV	RW	816	704	54	1723446
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454	ED_014_009	7N35	DV	RW	816	704	54	1723446
455	ED_014_010	7N35	DV	RW	816	704	54	1723446
456	ED_014_011	7N35	DV	RW	816	704	54	1723446
457	ED_014_012	7N35	DV	RW	816	704	54	1723446
458	ED_014_013	7N35	DV	RW	816	704	54	1723446
459	ED_014_014	7N35	DV	RW	816	704	54	1723446
460	ED_014_015	7N35	DV	RW	816	704	54	1723446
461	ED_014_016	7N35	DV	RW	816	704	54	1723446
462	ED_014_017	7N35	DV	RW	816	704	54	1723446
463	ED_014_018	7N35	DV	RW	816	704	54	1723446
464	ED_014_019	7N35	DV	RW	816	704	54	1723446
465	ED_014_020	7N35	DV	RW	816	704	54	1723446
466	ED_014_021	7N35	DV	RW	816	704	54	1723446
467	ED_014_022	7N35	DV	RW	816	704	54	1723446
468	ED_014_023	7N35	DV	RW	816	704	54	1723446
469	ED_014_024	7N35	DV	RW	816	704	54	1723446
470	ED_014_025	7N35	DV	RW	816	704	54	1723446
471	ED_016_001	7F35	DV	RW	816	704	54	1723446
472	ED_016_002	7F35	DV	RW	816	704	54	1723446
473	ED_016_003	7F35	DV	RW	816	704	54	1723446
474	ED_016_004	7F35	DV	RW	816	704	54	1723446
475	ED_016_005	7F35	DV	RW	816	704	54	1723446
476	ED_016_006	7F35	DV	RW	816	704	54	1723446
477	ED_016_007	7F35	DV	RW	816	704	54	1723446
478	ED_016_008	7F35	DV	RW	816	704	54	1723446
479	ED_016_009	7F35	DV	RW	816	704	54	1723446
480	ED_016_010	7F35	DV	RW	816	704	54	1723446
482	ED_016_011	7F35	DV	RW	816	704	54	1723446



483	ED_016_012	7F35	DV	RW	816	704	54	1723446
484	ED_016_013	7F35	DV	RW	816	704	54	1723446
485	ED_016_014	7F35	DV	RW	816	704	54	1723446
486	ED_016_016	7F35	DV	RW	816	704	54	1723446
487	ED_016_017	7F35	DV	RW	816	704	54	1723446
488	ED_016_018	7F35	DV	RW	816	704	54	1723446
489	ED_016_019	7F35	DV	RW	816	704	54	1723446
490	ED_016_020	7F35	DV	RW	816	704	54	1723446
491	ED_016_021	7F35	DV	RW	816	704	54	1723446
492	ED_016_022	7F35	DV	RW	816	704	54	1723446
493	ED_016_023	7F35	DV	RW	816	704	54	1723446
494	ED_016_024	7F35	DV	RW	816	704	54	1723446
495	ED_016_025	7F36	DV	RW	816	704	54	1723446
496	ED_018_001	7F36	DV	RW	816	704	54	1723446
497	ED_018_002	7F36	DV	RW	816	704	54	1723446
498	ED_018_003	7F36	DV	RW	816	704	54	1723446
499	ED_018_004	7F36	DV	RW	816	704	54	1723446
500	ED_018_005	7F36	DV	RW	816	704	54	1723446
501	ED_018_006	7F36	DV	RW	816	704	54	1723446
502	ED_018_007	7F36	DV	RW	816	704	54	1723446
503	ED_022_001	UNKN	DV	RW	816	704	54	1723446
504	ED_022_002	UNKN	DV	RW	816	704	54	1723446
505	ED_022_003	UNKN	DV	RW	816	704	54	1723446
506	ED_022_004	UNKN	DV	RW	816	704	54	1723446
507	ED_022_005	UNKN	DV	RW	816	704	54	1723446
508	ED_022_006	UNKN	DV	RW	816	704	54	1723446
509	ED_022_007	BLNK	DV	RW	816	704	54	1723446
510	ED_022_008	7F35	DV	RW	816	704	54	1723446
511	ED_022_009	7F35	DV	RW	816	704	54	1723446
512	ED_022_010	7F35	DV	RW	816	704	54	1723446
513	ED_022_011	7F35	DV	RW	816	704	54	1723446
514	ED_022_012	7F35	DV	RW	816	704	54	1723446
515	ED_022_013	7F35	DV	RW	816	704	54	1723446
516	ED_022_014	7F35	DV	RW	816	704	54	1723446
517	ED_022_015	7F35	DV	RW	816	704	54	1723446
518	JAC_138_001	7F68	DV	RW	816	704	54	1723446
519	JAC_138_002	7F68	DV	RW	816	704	54	1723446
520	JAC_138_003	7F68	DV	RW	816	704	54	1723446
521	JAC_138_004	7F68	DV	RW	816	704	54	1723446
522	JAC_138_005	7F68	DV	RW	816	704	54	1723446
523	JAC_138_006	7F68	DV	RW	816	704	54	1723446
524	JAC_138_007	7F68	DV	RW	816	704	54	1723446
525	JAC_138_008	7F68	DV	RW	816	704	54	1723446
526	JAC_138_009	7F68	DV	RW	816	704	54	1723446
527	JAC_170_001	7F68	DV	RW	816	704	54	1723446
528	JAC_170_002	7F68	DV	RW	816	704	54	1723446
529	JAC_170_003	7F68	DV	RW	816	704	54	1723446
530	JAC_191_001	6F29	DV	RW	816	704	54	1723446
531	JAC_191_002	6F29	DV	RW	816	704	54	1723446
532	JAC_191_003	6F29	DV	RW	816	704	54	1723446
533	JAC_191_004	6F29	DV	RW	816	704	54	1723446
534	JAC_191_005	6F29	DV	RW	816	704	54	1723446
535	JAC_191_006	6F29	DV	RW	816	704	54	1723446
536	JAC_191_007	6F29	DV	RW	816	704	54	1723446
537	JAC_191_008	6F29	DV	RW	816	704	54	1723446
538	JAC_191_009	6F29	DV	RW	816	704	54	1723446
539	JAC_191_010	6F20	DV	RW	816	704	54	1723446
540	JAC_224_001	6F2Q	DV	RW	816	704	54	1723446
541	JAC_224_002	6F2R	DV	RW	816	704	54	1723446
542	JAC_224_003	6F2S	DV	RW	816	704	54	1723446
543	JAC_224_004	6F2T	DV	RW	816	704	54	1723446
544	JAC_224_005	6F2U	DV	RW	816	704	54	1723446
545	JAC_224_006	6F2V	DV	RW	816	704	54	1723446
546	JAC_224_007	6F2W	DV	RW	816	704	54	1723446
547	JAC_224_008	6F2X	DV	RW	816	704	54	1723446
548	JAC_224_009	6F2Y	DV	RW	816	704	54	1723446
549	JAC_224_010	6F2Z	DV	RW	816	704	54	1723446
550	JAC_372_001	6F29	DV	RW	816	704	54	1723446
551	JAC_372_002	6N29	DV	RW	816	704	54	1723446
552	JAC_372_003	6F29	DV	RW	816	704	54	1723446
553	JAC_372_004	6F29	DV	RW	816	704	54	1723446
554	JAC_372_005	6F29	DV	RW	816	704	54	1723446

555	JAC_372_006	6F29	DV	RW	816	704	54	1723446
556	JAC_372_007	6F29	DV	RW	816	704	54	1723446
557	JAC_372_008	6F30	DV	RW	816	704	54	1723446
558	JAC_372_009	6F30	DV	RW	816	704	54	1723446
559	JAC_372_010	6F30	DV	RW	816	704	54	1723446
560	JAC_372_011	6F30	DV	RW	816	704	54	1723446
226	69_151_001	UNKN	UNK	UK	948	704	54	2002230
227	69_151_002	UNKN	UNK	UK	948	704	54	2002230
228	69_151_003	UNKN	UNK	UK	816	704	54	1723446
229	69_151_004	UNKN	UNK	UK	948	704	54	2002230
336	69_311_005	7N19	CAV	MP	1000	1352	54	4056054
337	69_311_006	7N19	CAV	MP	1000	1352	54	4056054
338	69_311_007	7N19	CAV	MP	1000	1352	54	4056054
339	69_311_008	UNKN	CAV	MP	700	952	54	1999254

For completeness, the following information was taken and repeated verbatim from the NSSDC website:

1) <http://nssdc.gsfc.nasa.gov/nmc/spacecraftDisplay.do?id=1969-014A>

“NSSDCA/COSPAR ID: 1969-014A, NSSDC ID: 1969-014A-01, Mission Name: Mariner 6, Principal Investigator: Dr. Robert B. Leighton

Two television cameras, one of medium resolution (wide angle) and the other of high resolution (narrow angle), were part of the Mariner 6 scientific instrumentation. The wide-angle camera, which had a field of view of 11 deg by 14 deg and a focal length of 50 mm, encompassed 100 times more surface area than the narrow-angle camera and was used only for near-encounter pictures. The narrow-angle camera, which was used for both near- and far-encounter pictures, had a focal length of 508 mm and provided 10 times the linear resolution of the wide-angle camera. Camera shutters were alternated and timed to provide overlapping of the wide-angle and narrow-angle pictures, providing 75 pictures from the two systems (26 near-encounter and 49 far-encounter, plus a 50th fractional far-encounter image). The near-encounter pictures were taken between 13 min 59 s before encounter and 2 min 55 s after encounter along a track that crossed the equatorial zones of the planet and included many known light and dark features of the Martian surface. The far-encounter pictures were obtained in two series of operations. In the first series, 33 pictures were obtained between 48 h and 28 h before encounter. In the second series, 17 pictures were obtained between 22 h and 7 h from closest approach. The picture data were encoded and recorded within the onboard television and data storage subsystems. For each picture produced by the cameras, three separate encoded versions were transmitted to earth -- a composite analog video (CAV) picture, a digital video (DV) picture, and an every twenty-eighth (ETE) digital picture. Video reconstruction consisted of combining the three data streams (CAV, DV, and ETE). This generated video data as they existed coming out of the camera heads. The telemetered video magnetic tapes were displayed on a CRT and photographed on 70-mm film to produce the raw images. They were also digitally processed by an IBM 360/44 computer for enhancement and by an IBM 360/75 for noise removal to obtain the versions contained in data sets -01C through -01H. Detailed information on the digital processing procedures can be found in "Digital Processing of the Mariner 6 and 7 pictures," T. C. Rindfleish et al, J. Geophys. Res. , v. 76, p. 394-417, January 1971. Accurate trajectory and related geometrical data can be found in Mariner Mars 1969 Simulated TV Pictures (Final), J. K. Campbell, 1970, which was issued by JPL.”

2) <http://nssdc.gsfc.nasa.gov/nmc/datasetDisplay.do?id=PSPG-00046>

“NSSDCA ID: PSPG-00046 Availability: At NSSDC, Ready for Offline Distribution (or Staging if Digital) Ancillary data are not needed for the proper use of these data Description

This data set contains Mariner 6 and 7 TV reduced data records. The records were originally on 7 track tapes and were copied onto CD-WO as part of the Science Digital Data Preservation Task (SDDPT). The original 7-bit data were padded to 8 bits by removing first (parity) bit and padding the resulting 6-bit characters to 8-bits by placing zeroes into the 2 highest order bits. The 7-track tape data was originally written in "SNAKED" format with attached EBCDIC VICAR labels in front of the data. The files on this CD are organized in one top-level directory with several subdirectories.

To display images originally archived on 7-track tapes use the VICAR program LABEL-CREATE, with inputs of NL = xxx (number of lines) and NS = xxx (number of samples). More information on these data is contained in the AAREADME.TXT and M69_INFO.TXT files on the CD.

The magnetic tapes in most cases, were at least 20-27 years old. Accompanying each tape on the disc, there is a log file which documents SDDPT processing history and copy errors. Each CD-WO has been formatted according to the ISO 9660 Interchange Standard so that a variety of computer systems may access the data. File attributes are specified by Extended Attribute Records which comprise the first 512 bytes of the file.

This data set was created at JPL as part of its Science Digital Data Preservation Task (SDDPT), and a copy was provided to NSSDC for safekeeping. Numerous SDDPT data sets are not readily usable, as they represent bit copies of old data tapes and do not contain user documentation. Persons interested in ordering these data should contact the NSSDC person listed for this data set. Freeware to view this particular data set is available at:

<http://members.tripod.com/petermasek/mariner67.html>

This is SDDPT data set code 69-030A-0019, volume ID M69_2001.”

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- <http://ser.sese.asu.edu/M67/mar67.html>