

The Mars Surveyor Program includes the Mars Global Surveyor now orbiting the planet, the Mars 98 orbiter and lander, the 2001 orbiter and lander, and the sample return missions planned for the 2003-2008 launch opportunities. The Program has adopted a common set of guidelines for generating and validating archives, along with transfer of the archives to the Planetary Data System (PDS) for use by the scientific community. These guidelines are published as the Mars Surveyor Program Data Management Plan [1 and <http://wundow.wustl.edu/msp/dmp.html>]. The guidelines focus on the use of PDS standards to generate documented archives of level 0 and derived data products, with a baseline period of six months from receipt of telemetry data to release of archives generated from the raw data. Each project within the Program is expected to write and follow a detailed Archive Plan [2 and <http://wundow.wustl.edu/mgs/>], based on the guidelines given in [1].

For Mars Global Surveyor (MGS), the anomalies associated with the aerobraking phase of the mission [3] have led to replanning the generation and release of archives. MGS went into orbit in September 1997, and began aerobraking to circularize the orbit (Table 1). Problems with one of the solar panel supporting structures led to a 26-day hiatus in aerobraking, followed by changes in the aerobraking approach that brought the spacecraft into a mapping orbit in February 1999, about a year later than originally planned [3]. During the aerobraking hiatus, MGS instruments acquired data that were published on the MGS Sampler CD-ROM (Volume MGS\_0001) in July 1998. The Sampler includes MOC images, MOLA altimetry data and derived profiles, TES spectra, and MAG/ER graphs, and is available through the Planetary Data System (PDS) and the National Space Science Data Center. The volume is online at <http://wundow.wustl.edu/mgs/sampler.html>. All data acquired by MGS during orbit insertion (including the aerobraking hiatus and the two science phasing orbit periods, SPO-1 and SPO-2) is being released as peer-reviewed, PDS-compliant archives. Beginning in October 1999, MGS data acquired during regular mapping will be released at six-month intervals. A total raw data volume of about 130 gigabytes is expected during the mapping mission.

For the remainder of this paper we focus on released and soon-to-be-released data sets from the SPO mission phases (Table 2). The PDS Imaging Node is

handling release of MOC data [4]. Ten CD-ROMs covering the Orbit Insertion Phase have been released. The data are also online via the Imaging Node's Planetary Image Atlas at <http://ida.wr.usgs.gov/>. Images can be selected using a map interface and can be downloaded in their original format or as JPEG images.

The PDS Geosciences Node is responsible for interacting with the MOLA and TES Teams and distribution of these data sets. An archive of MOLA data from the Orbit Insertion Phase has been generated, reviewed, and made available online at <http://wundow.wustl.edu/mgs/mola/>. This archive consists of MOLA raw and corrected altimetry data (AEDRs and PEDRs), a derived topography profile for each orbit, and software and documentation for accessing the PEDRs. Further, an archive volume containing TES SPO-1 along-track derived radiance files is in peer review and will soon be released to the community, soon to be followed by the SPO-2 archive. Finally, all orbit insertion data (hiatus and SPO, about 18 Gbytes) will be placed on a set of DVD-ROMs this summer by the PDS for distribution to the community, along with

*Table 1. Mars Global Surveyor Mission Phases*

Mission Phase	Start Date	End Date
Prelaunch Phase	1994-10-12	1996-11-06
Launch Phase	1996-11-06	1996-11-07
Cruise Phase	1996-11-07	1997-09-12
Inner Cruise	1996-11-07	1997-01-09
Outer Cruise	1997-01-09	1997-09-12
Orbit Insertion Phase	1997-09-12	1999-03-09
Aerobraking Phase 1A	1997-09-12	1997-10-12
Aerobraking Hiatus	1997-10-13	1997-11-07
Aerobraking Phase 1B	1997-11-08	1998-03-27
Science Phasing Orbit 1 (SPO-1)	1998-03-27	1998-04-28
Solar Conjunction	1998-04-29	1998-05-27
Science Phasing Orbit 2 (SPO-2)	1998-05-28	1998-09-23
Aerobraking Phase 2	1998-09-24	1999-02-04
Transition to Mapping	1999-02-04	1999-03-09
Mapping Phase	1999-03-09	2001-01-31
Radio Relay Phase	2001-01-31	2003-01-01

Table 2. MGS Orbit Insertion Data Archives

Data Set	Distribution-Medium	Status
MOC	Online, 10 CD-ROMs	Released
MOLA	Online, 2 CD-ROMs	Released
TES	Online, 20 CD-ROMs	In peer review
Radio Science	Level 1 online, level 0 on 159 write-once CD- ROMs (archive copies only)	Released
MAG/ER	TBD	TBD
Accelerometer	Online	Level 0 data to be released June 1999
SPICE Kernels	Online	In peer review
Sampler (MOC, MOLA, TES, MAG/ER data from Aero- braking Hiatus)	Online, 1 CD-ROM	Released
Complete Orbit Insertion Col- lection (except level 0 Radio Science)	2-3 DVD-ROMs	To be produced summer 1999

a Web-based search engine that will allow access to the data by space, time, and instrument. DVDs will probably be used for the release of large volume data sets at six-month intervals during the mapping mission.

References: [1] Arvidson and Slavney (1999) Mars Surveyor Program Data Management Plan. [2] Arvidson et al. (1998) Mars Global Surveyor Archive Generation, Validation, and Release Plan, MGS Document #542-312. [3] Albee et al. (1998) *Science*, 279, 1671-1672. [4] Caplinger et al. (1999) *LPS XXX*, Abstract #1659.