DVD For Space Science Applications

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DVD For Space Science Applications

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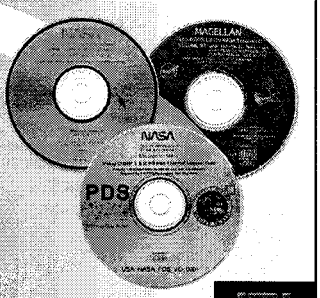
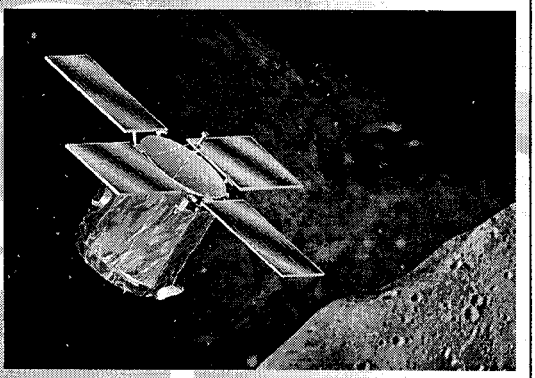
DVD For Space Science Applications - Test Cases

- Near Earth Asteroid Tracking Program (NEAT) - '99
  - Archive of thousands of 2k x 2k images taken to detect asteroids.
  - http://skys.gsfc.nasa.gov/skymorph/skymorph.html
- Planetary Data System - '99
  - ~1000 CD-ROMs to 150 DVD-Rs.
  - Available online via two Pioneer DRM-1004V40 100 disc DVD jukeboxes.
  - http://starbase.jpl.nasa.gov/pdsa



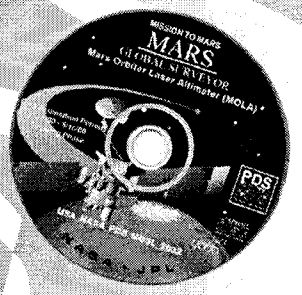
DVD For Space Science Applications - Automated DVD-R Production System

- Prior tasks done manually.
- New tasks presented a challenge - volume of CD-ROMs increased to thousands.
- Near Earth Asteroid Rendezvous (NEAR) archiving.
  - Up to 2400 CD-ROMs



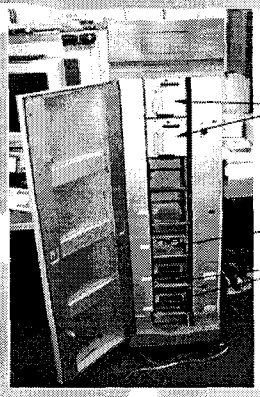
DVD For Space Science Applications - Automated DVD-R Production System

- Mars Global Surveyor Radio Science data, Galileo Radio Science data, and Mars Global Surveyor Mars Orbital Camera, Mars Orbiter Laser Altimeter, and Thermal Emission Spectrometer data.
  - Thousands of CDs for archival and distribution.
  - ~ 200 CD-ROMs to 30 DVD-Rs thus far.

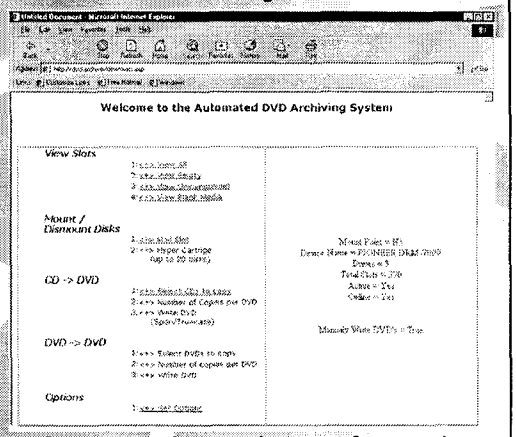


DVD For Space Science Applications - Automated DVD-R Production System

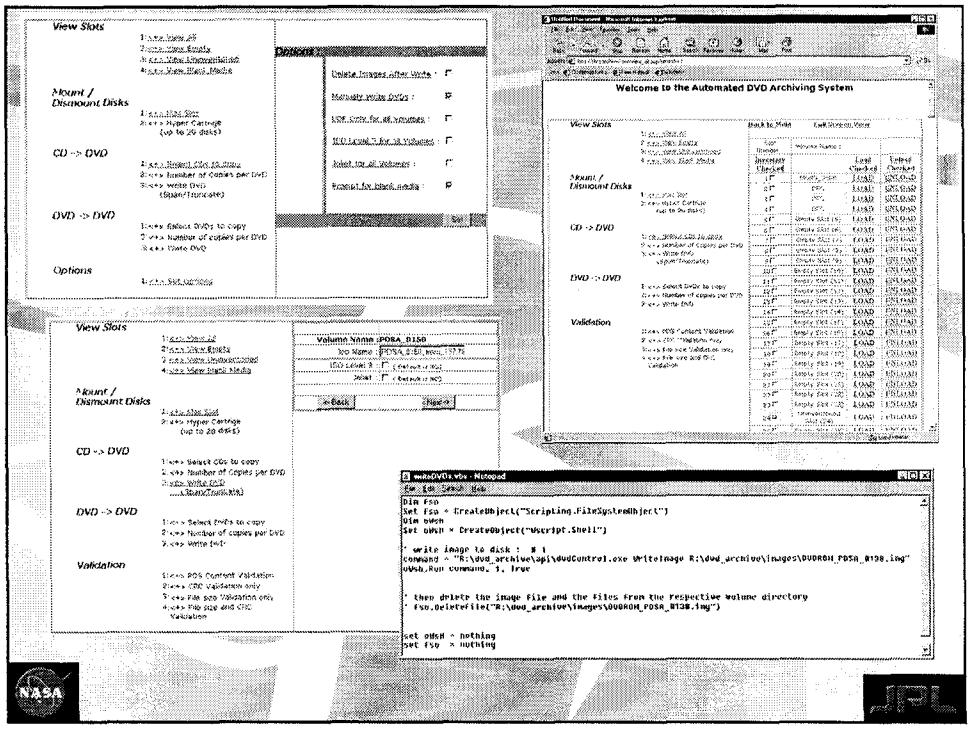
- Utilizes a Pioneer DRM-7000 DVD jukebox with a 370 disc capacity, two CD/DVD readers and one DVD recorder.



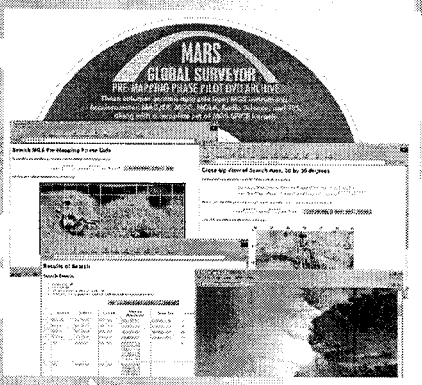
DVD For Space Science Applications - Automated DVD-R Production System



- SmartStor Archive 3.10 software with an application programming interface (API) package using Microsoft Active Server Pages.
- GUI design allows for selection of volumes for conversion to DVD-R, for specification of the type of conversion to be performed and the specification of duplication requirements for the output volumes.



DVD For Space Science Applications - Dual Layer DVD Products



- MGS DVD-ROM series, NASA's first dual-layer DVD series was completed in March and distributed to several hundred scientists at the Lunar and Planetary Conference.
  - Data selected for the DVD test was all of the data acquired during the MGS aerobraking phase.
  - 22 gigabytes of data on 3 dual-layer DVDs.
- 2MASS Sky Survey DVD-ROM

DVD For Space Science Applications - Challenges

- Current Problems with DVD-ROM/DVD-R
  - Incompatibility in DVD-ROM drives.
  - No competition with recorders = high prices.
  - Interchangeability of volume and file standards.
- Automated DVD-R Production System
  - Interaction of discs and drives.
  - Insertion of numerous discs.
- Dual-Layer DVD-ROM Products
  - Software issues.
  - Confirmed problems with various operating systems (Solaris 2.6 and earlier, HPUX, and IRIX).
  - Read errors from marginal readers.