



Dawn Mission Outreach E-News, 12th Edition

March 2007

MISSION UPDATE EXCERPTED FROM DR. MARC RAYMAN'S MOST RECENT DAWN JOURNAL

The Dawn spacecraft has completed the final and most challenging of the environmental tests needed to prepare for its launch and travels through space. During the past month, it has endured the extreme heat and cold of spaceflight in a large thermal vacuum chamber at the Naval Research Laboratory (NRL) in Washington, DC.

After the spacecraft and special monitoring equipment were installed in the chamber, plates whose temperature could be individually controlled were positioned around the spacecraft to ensure the desired thermal test conditions could be achieved. Pumps began removing air early in the evening of January 23, and by the next morning, the interior of the chamber was more than 100 million times below normal atmospheric pressure. The goal was to operate the spacecraft in ways similar to what it will face during its mission. By subjecting it to heat and cold, and testing the performance of its subsystems under both extremes, the engineering team verified that the critically important thermal control subsystem was able to keep temperatures within desired limits throughout the full range of conditions Dawn will encounter in space.

On February 14, Dawn's ion propulsion system was powered on for its long-awaited "hot fire test." The ion propulsion system cannot operate in normal atmospheric pressure, so although its individual components had been tested quite extensively, this was the only opportunity to test them all together. The digital control interface units, power processor units, xenon feed system, and thrusters all performed beautifully.

After leaving the NRL, Dawn's next destination is Cape Canaveral. Learn more about these recent tests by reading Dr. Marc Rayman's complete journal entry at:
http://dawn.jpl.nasa.gov/mission/journal_2_07.asp

VESTA COMES INTO VIEW

In the months preceding the launch of the Dawn spacecraft, asteroid Vesta, the mission's first scheduled target for orbital study, can be observed in the early hours of dawn. Dr. Lucy McFadden, Dawn Co-Investigator and Education and Public Outreach Director, explains the contributing factors to Vesta's increasing magnitude. As the asteroid becomes 10% brighter each day, professional and amateur astronomers, using both large and small telescopes, are taking advantage of the opportunity to expand upon our growing knowledge of Vesta. For more details, read Dr. Lucy McFadden's feature story at:
http://www.dawn-mission.org/feature_stories/Vesta_nightsky.asp

You can also access the accompanying image gallery at:
http://www.dawn-mission.org/feature_stories/Vesta_chart_descrip.asp

Want to observe Vesta but don't know how? Visit the newly developed Dawn Amateur Observers' Program pages. Elizabeth Warner has adapted her Amateur Observers' Program from the Deep Impact mission and extended it to include asteroids. Learn more at: <http://dawn-aop.astro.umd.edu>

DON YOUR OWN MISSION APPAREL

Get ready for launch by creating your own mission T-shirt with the newly released official Dawn mission iron-on patch. Instructions and patch design are both available at: http://dawn.jpl.nasa.gov/DawnKids/patch_direct.asp

Visit the Jet Propulsion Laboratory (JPL) store for more Dawn mission accessories and gift ideas including baseball caps, mugs, and decals. The on-line store can be accessed at: <http://www.bookstore.caltech.edu/JPLLAB/DEFAULT.ASP>

FEATURED CLASSROOM ACTIVITY: IN SEARCH OF...

While astronomy enthusiasts take advantage of Vesta's recently improved visibility in the sky, teachers can offer students an opportunity to discover an asteroid in the sky. In the hands-on activity, *In Search Of...* from the module *The History and Discovery of Asteroids*, students become members of the Celestial Police as they hunt for the "missing planet" using star maps that simulate several nights of viewing.

The activity can be downloaded from:

http://www.dawn-mission.org/DawnClassrooms/1_hist_dawn/history_discovery/Development/a_in_search_of.doc

To facilitate the activity, refer to page 8 of the teacher guide available at:

http://dawn.jpl.nasa.gov/DawnClassrooms/1_hist_dawn/history_discovery/Development/tg_devel_nobanner.pdf

Star charts for the activity can be printed and cut out, or you may prefer to show an "animation" by moving from one page to the next. Access the star charts at: http://www.dawn-mission.org/DawnClassrooms/1_hist_dawn/history_discovery/Development/star_chart.pdf

PLAN TO JOIN US IN FLORIDA THIS JUNE FOR THE DAWN LAUNCH EDUCATOR CONFERENCE

Stay tuned for more information about the exciting launch conference for educators that will be held in Cape Canaveral, Florida this coming June.

UPCOMING EDUCATION AND PUBLIC OUTREACH (E/PO) EVENTS

Dawn E/PO member John Ristvey will offer a hands-on workshop entitled *Exploring Careers in Science Through NASA Discovery Missions* on March 22nd at the National AfterSchool Association Conference in Phoenix, Arizona.

Dawn Co-Investigator and E/PO Director Lucy McFadden will present *NASA's Dawn Mission: Opening the Asteroid Frontier* on April 21st during Astronomy Day at NASA's Glenn Research Center in Cleveland, Ohio.

NASA's Dawn Science Academy will be hosted by the Denver Museum of Nature and Science on April 28th. Interested educators must register for this full-day workshop.

To find out more about these events, visit: <http://dawn.jpl.nasa.gov/education/index.asp>

ASK A SCIENTIST

Have a question about the Dawn mission and want to communicate directly with a member of the Dawn mission team? Click on the "Ask a Scientist" link located at the bottom of the Dawn Web site or simply go to: http://www.dawn-mission.org/ask_scientist/mailToDawnScientist.asp

TELL US WHAT YOU THINK

Continually seeking ways to improve the mission Web site, Dawn Education and Public Outreach is eager to receive your feedback. Please share your thoughts by completing a brief survey at: <http://survey.mcrcel.org/scripts/qweb.cgi?4CFEF46>

SUBSCRIPTION INFORMATION

Please forward this e-mail to others interested in NASA missions. New subscribers may join the Dawn mission e-news mailing list on our Web site at:

http://dawn.jpl.nasa.gov/DawnMedia/e_news.asp

Dawn Mission Outreach E-News features information about the mission, its outreach Web site, and products, services, and materials available from the Dawn Education and Public Outreach (E/PO) team. Dawn is the ninth Discovery mission in NASA's Science Mission Directorate and is a collaborative partnership made up of the University of California, Los Angeles; Jet Propulsion Laboratory; Orbital Sciences Corporation; Los Alamos National Laboratory; German Aerospace Center; Max Planck Institute for Solar System Research; Italian Space Agency; and Italian National Institute of Astrophysics. Dawn outreach materials are developed under contract by Mid-continent Research for Education and Learning (McREL), Denver, CO.