



Odyssey

Pushing the Edges

December
2005

Official Newsletter of OASIS: the Los Angeles Chapter of the National Space Society

LOSCON SPECIAL ISSUE

Spaceships Over LAX: OASIS Invades LosCon

By Steve Bartlett

Continuing its tradition of promoting space development amongst the science fiction community, OASIS provided a full range of activities and events at this year's LosCon over Thanksgiving weekend. The annual gathering, held at the LAX Marriott, featured a space-themed party, out-of-this-world programming, a children's craft project, and a large and busy information booth.

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"Mommy, can I go to the moon too?"

This is the prototype for a series of NASA rockets to be built for smaller payloads (such as this adorable astronaut!) *Photo: Steve Bartlett*

See inside for more juicy details on the adventures of OASIS at LosCon !



Nyah, nyah, I recruited more new members than you did! Steve Bartlett (left), Bob Gounley battle it out. *Photo: Seth Potter*

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Season's Greetings and Happy New Year!

"Serenity" Party a Big Hit

Local space enthusiasts used the popular sci-fi movie "Serenity" and the TV show "Firefly" as the basis for this year's rocket-powered shindig. Board member David Bliss played host to the celebration, decking out the party room to look like the office of a not-so-reputable space cargo shipper. Bliss brought a hand-cranked apple peeler, much like the one in the TV show, which had many attendees asking, "What IS that?!?!?"

Guest greeter Tina Beychok gave away space- and Western-themed stickers to guests as they came through the door, while videos of the "Firefly" show ran in the second room. The OASIS trivia contest, held every half-



Anara (aka Tina Beychok) peels apples while bouncers Bob Gounley and Paula Delfosse lurk in the background. *Photo: Seth Potter*

hour, featured a wide range of prizes.

The highlight of the evening was the giveaway of a complete set of videotapes for the HBO miniseries,

"From the Earth to the Moon." Dr. Jim Busby generously donated the set and worked on the series as a technical consultant.

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Left: Rachel Steinberger cautiously approaches Badger's lair. *Right:* Mal (aka Steve Bartlett) thinks about stealing a rare artifact (sorry, Serenity characters are NOT eligible for trivia prizes!) *Photos: Seth Potter*

LECTURE REVIEW

Greg Davidson: Metrics for Measuring NASA Performance

By Lisa Kaspin and Bob Brodsky

Greg Davidson, Deputy Program Manager for the James Webb Space Telescope Project at Northrop-Grumman Space and Technology, spoke about how he designed "Metrics for Measuring NASA Performance" for an appreciative audience at the November 30th meeting of the American Institute of Aeronautics and Astronautics at the LAX Crowne Plaza Hotel.

Davidson was charged with developing standards for the quality and quantity of NASA scientific achievements while at NASA's Office of Space Science in Washington, DC from the late 1980's to the early 1990's. The work was in response to Congress' passing the Government Performance and Results Act, which required government agencies to assess their performance in terms of their goals.

Davidson researched possible metrics for the following:

- ◆ Increase in capability over previous alternatives..
- ◆ Quantity of data obtained (but at the same time, its significance.)
- ◆ Cost efficiency or scientific information yielded per dollar.
- ◆ Number of papers in refereed scientific journals.

◆ Most importantly, whether the data answer fundamental questions and at the same time stimulate a new line of questioning.

Davidson developed metrics using the journal Science News: specifically, the end-of-the-year list of what Science News deems the most important stories in all fields of science. Since 1991, Davidson has published the Science News metric, assigning points to NASA missions based on the number of stories listed in the Science News summary.

The metric revealed the following:

◆ Among the most important stories, 7.2% reported on space science: the majority of those stories described NASA achievements! Up to 10% of worldwide scientific achievements per year were attributable to NASA over the period 1973-2004.

◆ Discoveries from the Hubble Space telescope alone (from 1990-2004) accounted for most (53) of the stories: more than Voyager (15.7), Viking (15.2), Galileo (11.2), and a combination of Apollo, Skylab, ATM, and Apollo-Soyuz (9.8) over a 30-year period!

So what do these achievements mean in terms of the types of

missions that NASA should undertake? There has been debate over whether to spend more for bigger, more complex missions, or to go for "faster, better, cheaper." To address this debate, Davidson used the Science News metric as a function of mission cost (Development plus Mission Operations and Data Analysis budgets) for performance in the 1990's.

◆ Larger missions (eg, Galileo, Mars Observer) averaged twice as much science knowledge per dollar as did the smaller missions (eg, TOMS-EP, Deep Space 1, SSTI Lewis and SSTI Clark.)

◆ In addition, one must consider that some of these missions had been extended or were in prime mission life, indicating that their value could increase as more science knowledge comes rolling in.

There are some caveats to the use of the Science News metric. Science News is not peer-reviewed, meaning that their assessment of importance was reviewed by an editorial staff and not by a panel of research scientists.

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Lisa Kaspin guards OASIS giveaways (Steve Bartlett's laptop is not one of them.) Photo: Steve Bartlett



Space trivia experts will get rich rewards, for once...! Photo: David Bliss

Cosmic Programming for the Masses

Besides the party, local NSS members also participated in several of the convention's space panel discussions. These talks included such topics as:

- ◆ Rocket Science in the Post-9/11 World
- ◆ Neat Space Places in the LA Area
- ◆ Space Projects on a Shoestring
- ◆ Entrepreneurial Space Programs
- ◆ Mars Exploration Rover Program
- ◆ Cassini Mission to Saturn

In addition, OASIS members helped to put on a fencing demonstration and participated in talks on the Serenity/Firefly universe.



En garde! A masked, gloved Tina Beychok lunges in for the "kill"! Photo: Seth Potter

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Building Spaceships with Kids One Booth to Teach Them All

Chapter members again put on the popular children's activity, "How Would YOU Build a Spaceship/Space Station?" where youngsters created model spacecraft from craft foam. (See the accompanying article below on this event.) OASIS supplied the materials and some guidance in using the foam cutters and glue guns and let the children do the rest. As always happens with this project, the participants showed great imagination, inspiration, and talent.

The OASIS education/information booth gave conventioners and staffers hours of fun with space videos, rocket models, space-themed candy (eg, Milky Way bars, Starburst fruit chews, and the now-rare Mars Bars), and giveaways. Chapter members gave away large numbers of Odyssey newsletters and Ad Astra magazines to the attendees, while enthusiastic model builders brought copies of SpaceShip One, Canadian Arrow, and X-43/Pegasus to display at the table. In addition,

booth staffers donated blood at the annual Red Cross blood drive at the convention.

OASIS would like to thank the following people for helping out with this year's convention activities: Bob Gounley, Paula Delfosse, Diane Rhodes, David Bliss, Dr. Seth Potter, Dr. Lisa Kaspin, Dr. Jim Busby, Tina Beychok, Rachel Steinberger, and Michael and Brandy Grote. We urge all members to participate in our work at LosCon and other events throughout the year.

OASIS Sponsors Junior Rocket Scientist League at LosCon

By Tina Beychok

As part of its involvement with this year's LosCon, OASIS once again sponsored the very popular "Build Your Own Spaceship" panel as part of childrens' programming. Using various styro-foam forms, pipe cleaners, construction paper, popsicle sticks, glue, and foam cutters, about two dozen kids used their imagination to build the spaceships of their dreams.

The various projects ranged from rocketships, to a gigantic ray gun that was used as part of

a Masquerade entry the next night, to eight-legged aliens. One young enterprising engineer even constructed what appeared to be some sort of plutonium bomb device inside a Dyson sphere (be afraid...be very afraid).

And of course once the ships were complete, a large intergalactic war was the next inevitable step! Regardless of which side was victorious, all parties appeared to have great fun.

OASIS would like to thank the

following people: Dr. Jim Busby and Patrick Fahey for volunteering to egg on the kids' imagination, as well as providing appropriate supervision; Alison Stern, head of LosCon Children's Programming, for allowing us to have the panel; and the children themselves, not only for their fabulous and creative projects, but for being so helpful in cleaning up afterward.

Great job, all you junior rocket scientists.

See you next year!



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OASIS, PO Box 1231
Redondo Beach, CA 90278

Metrics for Measuring NASA Performance

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In addition, the timing of events may affect their importance ratings.

Still, Science News fulfills an important need: it shows the significance of NASA's contributions in the context of science-wide and worldwide achievements, comparing NASA with organizations such as the National Science Foundation and the European Space Agency. This reporting of other countries' achievements, together with the fact that this metric is derived independently of NASA, minimizes the possibility of bias. In addition, the Science News metrics trends are comparable with trends shown by other publications, citations, and textbook content.

At the same time, other metrics did not fare as well as predictors of performance.

The rates of subsystem failures do not indicate the quality of a mission. If they did, large, complex missions, which are more prone to losing a subsystem yet are also more resilient, such as the Hubble, would be considered failures.

Another metric, the "bathtub curve" of failures plotted over time, does not always predict

a mission's success. Data from the 1992 OSSA Spacecraft Subsystem Reliability Historical Database showed that while the number of failures was highest at the beginning of missions (so-called "infant mortality"), the number of failures thereafter was random over time. This contradicted the expectation of a plateau in failures until a point when many systems fail at once (the other side of the bathtub.)

In light of the importance of metrics for NASA's accomplishments, Davidson ended his talk by discussing one of the most important factors in the success of any mission: the human factor. How many projects have ended up in failure, or even in a disaster such as the Challenger, because of human errors? Failure review boards have found that the root causes stemmed from "leadership" or "culture" issues. Davidson showed a system created by 4 Dimensional Systems (Boulder, CO) for measuring and addressing human factors such as relating, directing, valuing, and visioning. He asserted that such systems can increase the number of successful missions and even save lives with human exploration.

February 12. 11:00 am to 4:15 pm.

Reach for the Stars at the Sally Ride Science Festival at the University of California, San Diego!

The festival features:

- o An inspiring talk by astronaut Sally Ride
- o Discovery Workshops for girls, given by local veterinarians, astronomers, microbiologists, and engineers
- o Workshops for parents and teachers on ways to support girls' interests in science and math
- o A Street Fair with hands-on activities, booths, food, and music

Advance registration is required: \$18. The registration fee includes the featured talk, workshops, lunch, and the Street Fair.

Festival Schedule

11:00 am - 1:00 pm

1:00 pm - 4:15 pm

Check-in, Lunch, Street Fair

Featured Talk, Discovery Workshops, Street Fair, Free Drawing

<http://www.sallyridefestivals.com/06ucsd0212/index.shtml> for registration form and mailing address

or phone (800) 561-5161.

February 18. OASIS Board Meeting @ 3:00 pm Home of Craig & Karin Ward, 1914 Condon Avenue, Redondo Beach, CA 90278. See www.oasis-nss.org/ or phone OASIS HOTLINE AT (310) 364-2290.



Name: _____

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Interests: _____

I wish to join as an:

- ___ \$15 Individual
- ___ \$25 Family*
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- ___ \$50 Adventurer MMM yes/no**
- ___ \$75 Pioneer MMM yes/no**
- ___ \$150 Explorer MMM yes/no**
- ___ \$12 Student/Senior
- ___ \$12 Child (no Odyssey, only children's edition)

Membership Dues: \$ _____

Additional Contribution: \$ _____

Total Enclosed: \$ _____

Rates listed are for yearly dues

Mail check and completed form to:

OASIS Memberships
PO Box 1231
Redondo Beach, CA 90278

*Family rates include the children's edition. Please specify names of children.

**Supporter level or higher: you can choose to subscribe to the Moon Miners Manifesto (MMM)

December 13. Geminids meteor shower peak.

December 21. Progress M-55 Soyuz FG launch (International Space Station 20P).

December 21, 10:35 am. Winter Solstice.

December 26. Cassini, Titan flyby. <http://saturn.jpl.nasa.gov/home/index.cfm> .

HAPPY NEW YEAR 2006!!

January 11. New Horizons Atlas V launch (Pluto Mission). <http://pluto.jhuapl.edu/> .

January 15. Stardust, capsule return to Earth. <http://stardust.jpl.nasa.gov/> .

January 15. Cassini, Titan flyby. <http://saturn.jpl.nasa.gov/home/index.cfm> .

January 21, noon. OASIS Monthly Business Meeting. Home of Steve Bartlett and Tina Beychok, 7108 East Peabody Street, Long Beach, CA 90808. See www.oasis-nss.org/ or phone OASIS HOTLINE AT (310) 364-2290.

January 21, 3:00 pm. "Gathering Stardust," by Darren Baird, Stardust Navigation Team, Jet Propulsion Laboratory. Long Beach Public Library, 101 Pacific Avenue, Long Beach. Sponsored by OASIS. Admission is free. Phone (310) 364-2290 or <http://www.oasis-nss.org/> .

January 26, 7:00 pm. Lecture by George W. "Pinky" Nelson, Professor of Astronomy and former NASA astronaut. Galileo Hall, Harvey Mudd College, 301 Platt Blvd, Claremont. Sponsored by Claremont Colleges Distinguished Speaker Series. Phone (909) 607-7924 or <http://www2.dof.hmc.edu/Spkr/default.html> .

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