



Chicago Society for Space Studies Spacewatch - March 2018

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CSSS Meeting April 22: *The History of the Space Program*

The next meeting of Chicago Society for Space Studies will feature CSSS Vice President Larry Boyle giving his presentation *The History of the Space Program*. Larry's presentation begins with a brief look at the pre-1957 history of space exploration and goes on to cover highlights of manned space exploration from 1957 through the Apollo moon landings, as well as the planetary exploration missions. The presentation will examine the roles of the United States and Russia, and both the increasing number of national as well as non-governmental (private) participants.

The presentation, which begins at 1:00pm, will be preceded by an informal members meeting which will begin at 12:30pm. Doors open at 12:00pm.

This meeting is free and open to the public so be sure to invite friends and family.

Meeting Details:

When: 12:30pm (meeting), 1:00pm (lecture) Sunday April 22, 2018

Where: Rasmussen North Meeting Room (on the 2nd Floor)
Schaumburg Township District Library
130 South Roselle Road
Schaumburg, IL

[Visit the CSSS web site events page.](#)

CSSS Members Eligible to Receive 25% Rebate on ISDC Conference Registration

Members of Chicago Society for Space Studies are now eligible to receive a 25% rebate on their registration for the International Space Development Conference (ISDC). The conference will be held May 24-27 at the Sheraton Gateway Hotel, Los Angeles CA. Conference highlights include:

- Blue Origin Founder Jeff Bezos will accept the Gerard K. O'Neill Memorial Award For Space Settlement Advocacy.
- Legendary physicist Dr. Freeman Dyson will outline his pioneering ideas on space.
- Astronomer, astrophysicist and early SETI advocate Dr. Frank Drake will explain his famed *Drake Equation*.
- NASA astronaut and famed space walker Dr. Kathryn Sullivan will discuss new initiatives for space.
- Thomas Mueller, SpaceX's Propulsion Chief Technology Officer, will speak on SpaceX's amazing progress and advances in rocket propulsion.

Registration Option 1

While this offer is good for all CSSS members, a substantial registration discount is offered to NSS members. If you want to attend ISDC but aren't currently a NSS member, here is how you can both save money on registration while making money for CSSS:

Step 1: Become a NSS member by joining NSS

at www.nss.org/membership/new_member_form.shtml When filling out the new member form, you need to indicate your chapter affiliation in **Section I Membership Information**. Specifically:

a) In response to the question: *How did you hear about NSS?*, select the "An NSS chapter" option from the dropdown.

b) Immediately underneath for the *Chapter* dropdown, specify **IL -- NSS Chicago Society for Space Studies**.

Note: If you use this method, you may expect to wait up to one week for your NSS membership number to arrive via email - which you need in order to get the ISDC NSS member registration rate. Therefore, do NOT use this method if the next scheduled rate increase (now set at April 15) is less than a week away.

Alternatively you can simply join NSS at the time you fill out the ISDC registration form. The only downside is that CSSS will not receive a rebate on your NSS membership.

Step 2: Follow the ISDC registration instructions outlined in **Registration Option 2** below.

Registration Option 2

Using the ISDC registration form at <https://www.nss.org/cgi-bin/register/tdregister?>

[§Origin=ISDC18](#), in "**Section IV - ISDC Badge Information**", for the field

labeled **Company/Affiliation**, enter the value "NSS Chicago Society for Space Studies" AND for the field immediately below it, labeled **NSS Position**, from the dropdown list, select the option "NSS Chapter Member"

That's it. Some time after the ISDC has concluded, rebates will be mailed to all registrants who indicated that they were chapter members by correctly filling out the registration form. Note that registration rates will increase on April 15 and that this rebate offer expires May 17. For additional information about the ISDC, visit the [ISDC 2018 website](#)

Coming Events

April 5: Meet the Apollo 8 Astronauts at MSI

The Chicago Museum of Science and Industry is offering an intimate conversation with the crew of Apollo 8 (Frank Borman, Jim Lovell, Bill Anders) to celebrate the 50th anniversary of Man's first journey to the Moon, and the launch of the new book, *Rocket Men*, by bestselling Chicago author Robert Kurson

Admission costs \$35 and includes a copy of *Rocket Men* signed by the author, a panel discussion with the Apollo 8 astronauts, admission to select Museum exhibits, and light snacks. A cash bar will also be available. Discounted parking (\$14) will be available in the MSI underground garage.

Admission: \$35 - ticket includes a signed copy of the book *Rocket Men*

When: Thursday, April 5, 2018 at 7:00 pm (doors open at 6:30)

Where:

Museum of Science and Industry
5700 S. Lake Shore Drive, Chicago

Tickets are available at msichicago.com/rocketmen.

April 12: Failing Fast, Failing Often

This NewSpace Chicago event features special guest Brian Stofiel of Stofiel Aerospace who will discuss his experience founding a Midwest space business - recruiting talent, fundraising, and developing novel space technologies. Stofiel Aerospace is a St. Louis company which has developed a functional rocket nozzle that is printed using high grade 3D printing and which is capable of carrying small payloads to high altitude. It is the first solid fueled rocket to thrust, throttle, and vector. Stofiel Aerospace is fast becoming a leader in the small satellite launch sector.

Admission Fee: \$5.00

When: Thursday, April 12, 2018 from 6:00 PM - 9:00 PM

Where:

mHUB Chicago event space
965 W Chicago Ave, Chicago, IL

* Free parking available in the mHUB parking lot after 5:30pm.

For details and ticketing see www.eventbrite.com/e/event-thu-412-failing-fast-launching-often-tickets-44444464590.

April 14: Fantastic Space Exploration and Cutting Edge Discoveries

As a part of Harper College Continuing Education, CSSS Speakers Bureau member James Kovac will be taking a look at recent discoveries in planetary science, including Cassini/Huygens at Saturn, the Curiosity and Opportunity rovers on Mars, and New Horizons' fly-by of Pluto. The program will be Saturday, April 14th from 2:00 to 2:30pm.

When: Saturday, April 14th from 2:00 to 2:30pm

Where:

Harper College, Building D, Room D193
1200 W. Algonquin Road
Palatine, IL 60067

For complete details, see <https://www.harpercollege.edu/50/events/inspire-u-experience-expo.php>.

April 19: The History of the Space Program

Chicago Society for Space Studies Vice President Larry Boyle will give his presentation *The History of the Space Program* at the Orland Park Public Library on Thursday, April 19, 2018. For a complete description of the presentation, see the description in the CSSS Meeting section at the top of this newsletter.

When: 7:00 pm to 8:30 pm on Thursday, April 19, 2018

Where:

Orland Park Public Library
14821 Ravina Ave.
Orland Park, IL 60402
Library Phone Number: (708) 928-5100

April 21: Astronomy Day at Harper College

The Northwest Suburban Astronomers are hosting their excellent and long running annual **Astronomy Day** event at Harper College in Palatine. This event will be held rain or shine with programming beginning at 6:00pm and running until 9:00pm. Weather permitting, telescope will be available for observations of the night sky. Doors open at 5:30pm.

CSSS Speakers Bureau member James Kovac will give his presentation *Mysteries of the Cosmos* "The Search for Alien Life" which discusses the search for life.

CSSS President will give *Planet Earth As Art - The View From Space* which explores satellite imagery of our home planet.

When: Saturday, April 21st at 8:00 pm

Where:

Harper College, Building Z
1200 W. Algonquin Road
Palatine, IL 60067

For complete details, see www.nsaclub.org/astronomy-day/.

Space News

U.S. National Laboratory Research Geared for SpaceX Commercial Resupply Services Mission to the Space Station

KENNEDY SPACE CENTER, FL. (March 21, 2018) -- The 14th Commercial Resupply Services mission to the International Space Station (ISS) by SpaceX is targeted for launch no earlier than 4:30 p.m. EDT on April 2. A Dragon cargo spacecraft previously flown on SpaceX's 8th commercial resupply mission to the station for NASA will now include 20 separate payloads sponsored by the ISS National Laboratory (managed by the Center for the Advancement of Science in Space). These payloads represent a diverse combination of science, technology, and the validation of new facilities that will contribute to greater research capacity in the future. Additionally, multiple investigations will launch to station focused on inspiring the next generation of scientists and engineers.

Highlights of sponsored ISS National Lab investigations that are part of the SpaceX CRS-14 mission:

- ABI-Barley Germination
 - Comparative Real-time Metabolic Activity Tracking
 - Genes in Space
 - Effects of Microgravity on Controlled Release of Antibiotics and Curing Mechanism of a Novel Wound Dressing
 - Higher Orbits Go For Launch! **(note that this is a project that CSSS has previously provided programming support to)**
 - Magnitude.io
 - Materials International Space Station Experiments Flight Facility
 - Multi-use Variable-g Platform
 - NanoRacks Microscopes
 - NanoRacks-NDC-Beta-Amyloid Peptide
 - Nanoracks-Remove Debris
 - NanoRacks-Valley Christian - Effect of BAM-FX Nutrient Solution on Plant Growth in Microgravity
 - National Design Challenge-Boy Scouts of America
 - Neutron Crystallographic Studies of Human Acetylcholinesterase for the Design of Accelerated Reactivators - 2
 - Princeton Institute for the Science and Technology Materials
 - Space Tango Fan Module
 - Wisconsin Crystal Growing Contest-Wisconsin Space Crystal Mission
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NASA receives \$20.7 billion in omnibus appropriations bill

WASHINGTON March 22, 2018 -- A final fiscal year 2018 spending bill released by House and Senate appropriators March 21 would give NASA more than \$20.7 billion, far above the administration's original request. The omnibus spending bill... restores funding for Earth science and education programs ... and includes additional money for the agency to build a second mobile launch platform for the Space Launch System. ... gives NASA \$20.736 billion for the 2018 fiscal year... more than \$1.6 billion above the administration's original request of \$19.092 billion.

For the complete story, go to spacenews.com/nasa-receives-20-7-billion-in-omnibus-appropriations-bill/

Bipartisan Group Of 61 House Members Urges Senate To Confirm Bridenstine

March 20, 2018 -- A bipartisan group of 61 members of the House of Representatives sent a letter to Senate leaders today urging confirmation of Rep. Jim Bridenstine (R-Oklahoma) to be NASA's new Administrator. Bridenstine was originally nominated by President Trump in September 2017, but he is reportedly opposed by all Senate Democrats and at least one and possibly more Republicans. Senate Majority Leader Mitch McConnell (R-Kentucky) has not brought the nomination to the floor presumably because he does not believe there are sufficient votes for it to pass.

For the complete story, go to spacepolicyonline.com/news/bipartisan-group-of-61-house-members-urge-senate-to-confirm-bridenstine/

Space On The Web

TEDx Talks: Manufacturing in space could save life on Earth

The TEDx talk *Manufacturing in space could save life on Earth* by James Orsulak was added to Youtube on Jan 3, 2018. In this video, James Orsulak argues that the only way to really make a difference is to look up. James Orsulak serves as the Director of Business Development at Planetary Resources, an asteroid mining company that has embarked on the world's first commercial deep space exploration. The company focuses on technologies such as rocket propellant, water for life support functions, and construction materials sourced from asteroids.

View the video on [Youtube](#).

Thanks to CSSS member Fred Becker for bringing this video to my attention.

This Issue's Quotations - Dedicated to Stephen Hawking

Some quotes from Stephen Hawking: physicist, cosmologist, author, and Director of Research at the Centre for Theoretical Cosmology at the University of Cambridge. (January 8 1942 - March 14 2018)

"I don't think the human race will survive the next thousand years, unless we spread into space. There are too many accidents that can befall life on a single planet. But I'm an optimist. We will reach out to the stars."

"Our population and our use of the finite resources of planet Earth are growing exponentially, along with our technical ability to change the environment for good or ill. But our genetic code still carries the selfish and aggressive instincts that were of survival advantage in the past. It will be difficult enough to avoid disaster in the next hundred years, let alone the next thousand or million. Our only chance of long term survival, is not to remain inward looking on planet Earth, but to spread out into space."

"Evidently, God not only plays dice but plays blind-folded, and, at times, throws them where you can't see them."



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the National Space Society
Winner of the National Space Society's 2016 Chapter of the Year Award**