

[July 31, 2014]

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[While waiting for an AIAA Houston Section Editor to be found for the AIAA year starting July 1, 2014, we plan to prepare about one page of inputs every two months starting August 31, 2014, to be prepared as if a bimonthly deadline existed. We plan to prepare this first article by August 15, 2014. We will use this simple Word format and create a simple PDF document for ease of emailing and reading. Our purpose is to encourage new Editor candidates by letting them know that we are eager to submit our writing for Horizons. The two of us can also encourage others to submit French-American space articles to our new Horizons Editor, in the spirit of our French-American sister section relationship.]

### NASA NEEMO 18 with ESA Astronaut Thomas Pesquet of France

[July 25, 2014]

NEEMO is NASA Extreme Environment Mission Operations, sending astronaut teams to an underwater building for a week or two at a time. They train by staying in that building and going outside with scuba gear for spacewalk simulations. NEEMO 18 is taking place from July 21-29, 2014, and one of the four participants is from France, ESA astronaut Thomas Pesquet.

NEEMO 1-12 took place from 2001 to 2012, and NEEMO 17 was not conducted. It is good to see these missions taking place again. AIAA Houston Section's Horizons newsletter reported on this subject starting on page 14 of our Fall 2007 [issue](#) (our December 2007 issue). Our presenter for that dinner meeting was Marc Reagan of NASA/JSC.

For more NEEMO information, see the Wikipedia [entry](#), the NASA [page](#), or the Aquarius [page](#) of the website of Florida International University (FIU).

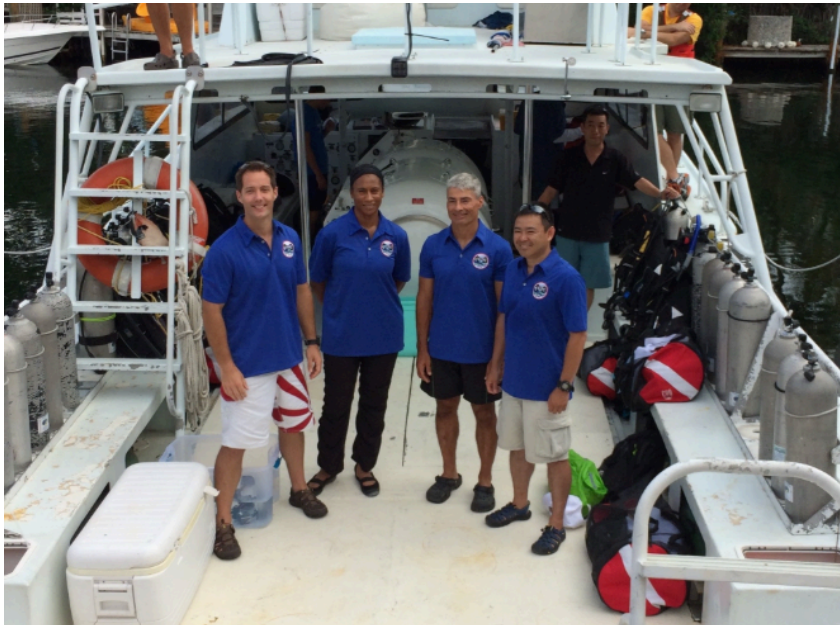


Image credit: [http://www.nasa.gov/sites/default/files/img\\_6057\\_crew\\_crop.jpg](http://www.nasa.gov/sites/default/files/img_6057_crew_crop.jpg)

Caption:

The NEEMO 18 crew. Left to right: Thomas Pesquet (ESA), Jeanette J. Epps (NASA), Mark T. Vande Hel (NASA), and Akihiko Hoshide (JAXA astronaut and NEEMO 18 Commander). Image [credit](#): NASA.

Meet the NEEMO 18 and 19 crews: <http://www.nasa.gov/content/meet-the-neemo-18-and-19-crews/>

## Rosetta Comet Rendezvous is a Triumph for the European Space Agency

[August 6, 2014, Stuart Clark, The Guardian, Science [blog entry](#)]

The above blog entry is our introduction to this subject. The main source for information about Rosetta is this [page](#) on the European Space Agency (ESA) website:

[http://www.esa.int/Our\\_Activities/Space\\_Science/Rosetta](http://www.esa.int/Our_Activities/Space_Science/Rosetta)

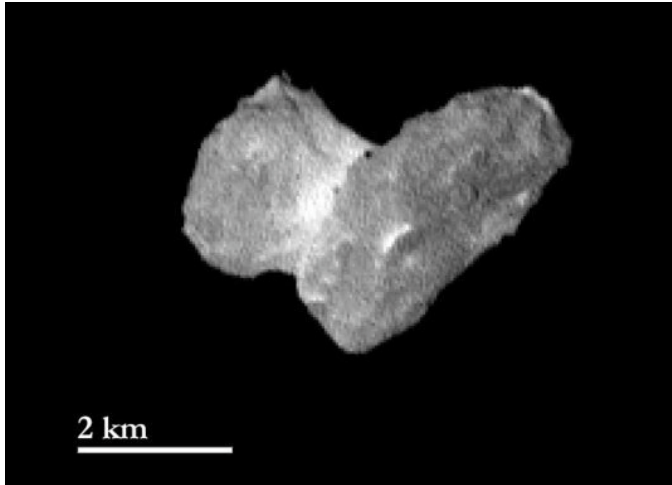


Image: This image is provided by this article on the website of the Max Planck Institute for Solar System Research. (Thanks to SpaceRef's daily email newsletter of July 31, 2014, for calling this image to our attention.) [http://www.mps.mpg.de/3701561/PM\\_2014\\_07\\_31\\_Rosetta-Komet\\_Anzeichen\\_von\\_Aktivitaet](http://www.mps.mpg.de/3701561/PM_2014_07_31_Rosetta-Komet_Anzeichen_von_Aktivitaet)

Caption: The nucleus of comet 67P/Churyumov-Gerasimernko as seen from a distance of 1950 kilometers on July 29th, 2014. One pixel corresponds to approximately 37 meters. The bright neck region between the comet's head and body is becoming more and more distinct. Image [credit](#): ESA/Rosetta/MPS for OSIRIS Team MPS/UPD/LAM/IAA/SSO/INTA/UPM/DASP/IDA.

[The ESA Rosetta press releases provide background about Rosetta and ESA. They mention two ESA programs, Copernicus and Galileo. Galileo will provide GPS-like capabilities and includes cooperation with the United States of America, as noted in the Galileo Wikipedia article. Below are more details about Copernicus, whose information services can be grouped into six themes, one of which is climate change, highlighted in italics below.]

### Copernicus Program of the European Space Agency

[August 11, 2014, Wikipedia]

Copernicus, formerly Global Monitoring for Environment and Security (GMES), is a program of the European Commission (EC) which aims at achieving an autonomous, multi-level operational Earth observation capacity. Its cost during 1998 to 2020 is estimated to be 8.4 billion euros. The European Space Agency (ESA) has performed much of its design and oversees and co-funds the development of Sentinel 1, 2 and 3 satellites and Sentinel 4 and 5 instruments for MTG and METOP SG weather satellites of EUMETSAT.

The objective is to use multi-source data to get a timely and quality information, services and knowledge, and to provide autonomous and independent access to information in relation to environment and security on a global level. In other words, it will pull together all the information obtained by the Copernicus environmental satellites, air and ground stations to provide a comprehensive picture of the "health" of Earth.

The geo-spatial information services offered by Copernicus can be grouped into six main interacting themes: land, ocean, emergency response, atmosphere, security and *climate change*. The first three Copernicus services under the land, ocean and emergency response themes and two additional services

addressing the atmosphere and security themes were unveiled at the Copernicus Forum held in Lille in September 2008. Currently in their pre-operational phase, it is foreseen that these services enter into an EU-wide operational phase by 2011, with the objective to be fully operational by 2014.

ESA Copernicus website: [http://www.esa.int/Our\\_Activities/Observing\\_the\\_Earth/Copernicus](http://www.esa.int/Our_Activities/Observing_the_Earth/Copernicus)

EC Copernicus website: [http://ec.europa.eu/enterprise/policies/space/copernicus/index\\_en.htm](http://ec.europa.eu/enterprise/policies/space/copernicus/index_en.htm)

[The EC Copernicus home page starts with these words:

*“Environmental information is of crucial importance. It helps to understand how our planet and its climate are changing, the role played by human activities in these changes and how these will influence our daily lives.”]*