

VIIRS eastern hemisphere image: Behind the scenes

February 3 2012



NASA scientists created the two new 'Blue Marble' images from data acquired by a new instrument that's aboard the Earth-observing satellite Suomi NPP, the Visible Infrared Imaging Radiometer Suite (VIIRS). Credit: NASA/NOAA



(PhysOrg.com) -- The Suomi NPP satellite is in a polar orbit around Earth at an altitude of 512 miles (about 824 kilometers), but the perspective of the new Eastern hemisphere 'Blue Marble' is from 7,918 miles (about 12,743 kilometers). NASA scientist Norman Kuring managed to 'step back' from Earth to get the big picture by combining data from six different orbits of the Suomi NPP satellite. Or putting it a different way, the satellite flew above this area of Earth six times over an eight hour time period. Norman took those six sets of data and combined them into one image.

The new image is a composite of six separate orbits taken on January 23, 2012 by the Suomi National Polar-orbiting Partnership satellite. Both of these new 'Blue Marble' images are images taken by a new instrument flying aboard Suomi NPP, the Visible <u>Infrared Imaging</u> Radiometer Suite (VIIRS).

Compiled by <u>NASA</u> Goddard scientist Norman Kuring, this image has the perspective of a viewer looking down from 7,918 miles (about 12,742 kilometers) above the Earth's surface from a viewpoint of 10 degrees South by 45 degrees East. The four vertical lines of 'haze' visible in this image shows the reflection of sunlight off the ocean, or 'glint,' that VIIRS captured as it orbited the globe. Suomi NPP is the result of a partnership between NASA, <u>NOAA</u> and the Department of Defense.

Using a basketball you can get a good idea of how far away the Suomi NPP satellite is from Earth. Take a basketball that has a diameter of 10 inches (about 25 centimeters) and say that's 'Earth.' (For the record, Earth has a diameter of about 7,926 miles (about 12,756 kilometers)).





Responding to public demand, NASA scientists created a companion image to the wildly popular 'Blue Marble' released last week (January 25, 2012). Credit: NASA/NOAA

So to get the same view of Earth as the VIIRS instrument aboard the Suomi NPP satellite, hold the basketball five-eighth of an inch (about one-and-a-half centimeters) away from your face.

The actual swath width of the Earth's surface covered by each pass of VIIRS as the <u>satellite</u> orbits the Earth is about 1,865 miles (about 3,001



kilometers). On the basketball that's about two and one-third inches (about six centimeters).

For reference:

Over its lifetime the International Space Station's altitude has been between 205 miles (about 330 kilometers) and 255 miles (410 kilometers) above the Earth's surface. That brings your 'basketball Earth' closer to your face at about five-sixteenth of an inch (about point-eight centimeters) away.

The original 'Blue Marble' image is a photograph taken by the Apollo 17 astronauts as they traveled toward the moon. It was taken at a distance of about 28,000 miles (45,062 kilometers). That puts your 'basketball Earth' at over 30 inches (76 centimeters) away from your face, or roughly an arm's length away.

The moon is about 238,857 miles (384,403 kilometers) away from the Earth's surface. That puts your 'Earth basketball' about 25 feet (about 7.6 meters) away, which is roughly the distance a three-point line on a basketball court is from the basket.

According to Flickr, that Western hemisphere Blue Marble 2012 image has more than 3.1 million views as of February 1st, making it one of the all-time most viewed images on the site after only one week.

Provided by JPL/NASA

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