

Astro I: Introductory Astronomy

7.2 PATTERNS IN THE SOLAR SYSTEM

Our goal in studying the solar system as a whole is to look for clues that might help us develop a theory that could explain how it formed. In this section, we'll explore the patterns of our solar system in more depth, and organize these patterns into a set of general features that tell us about our solar system's formation.

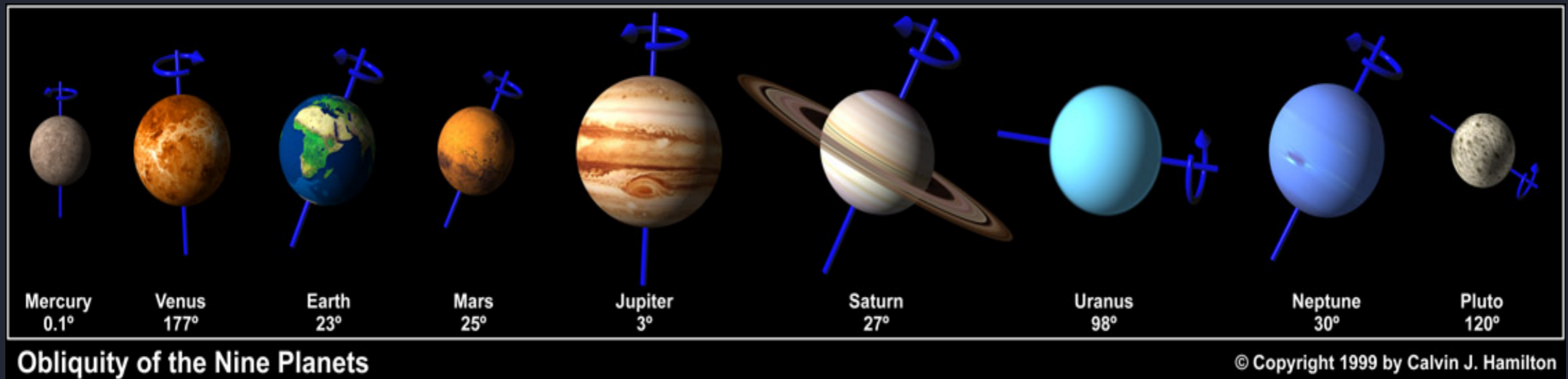
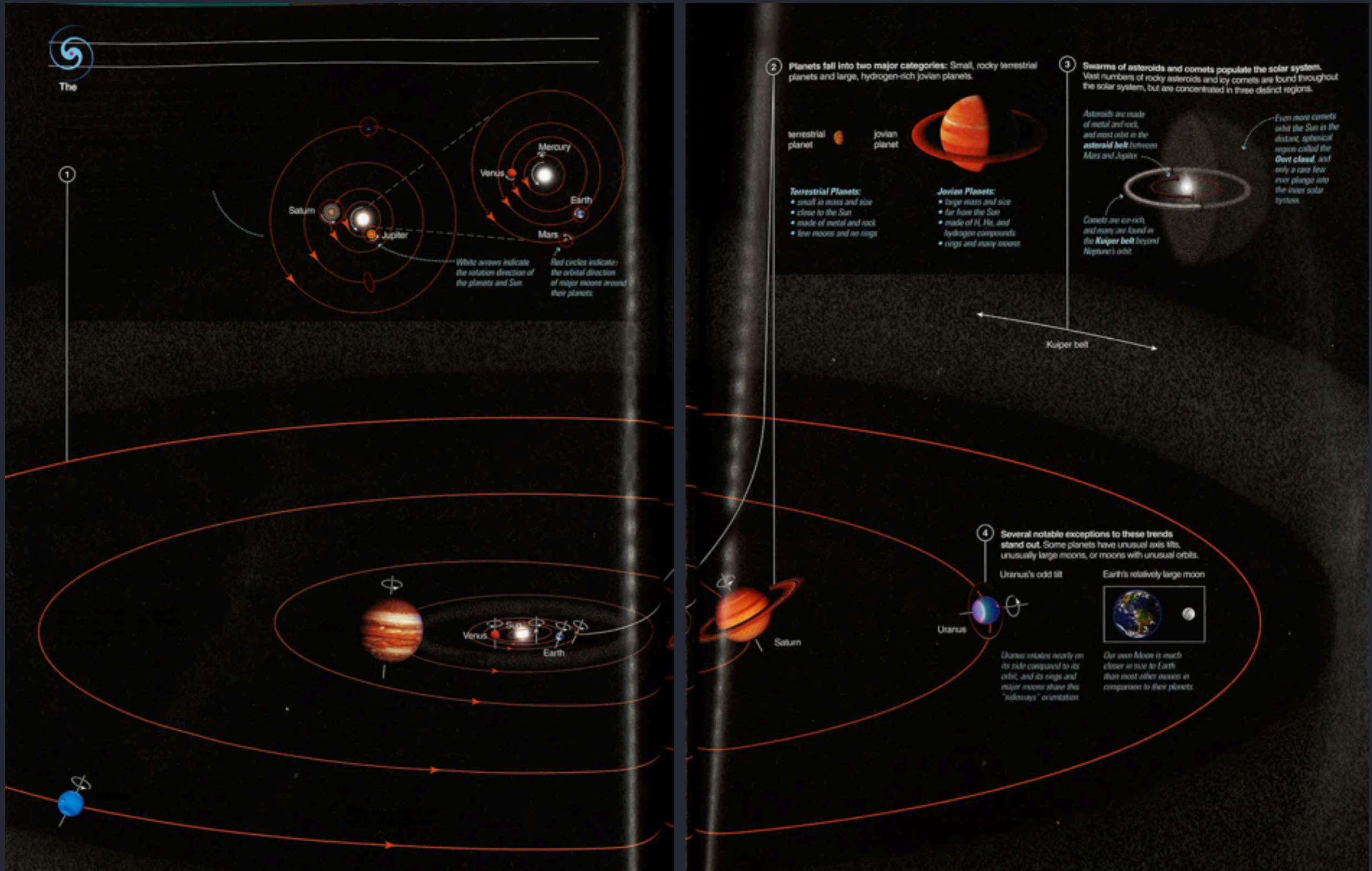


Figure 7.1 is really useful; study it carefully!





Mars

Saturn

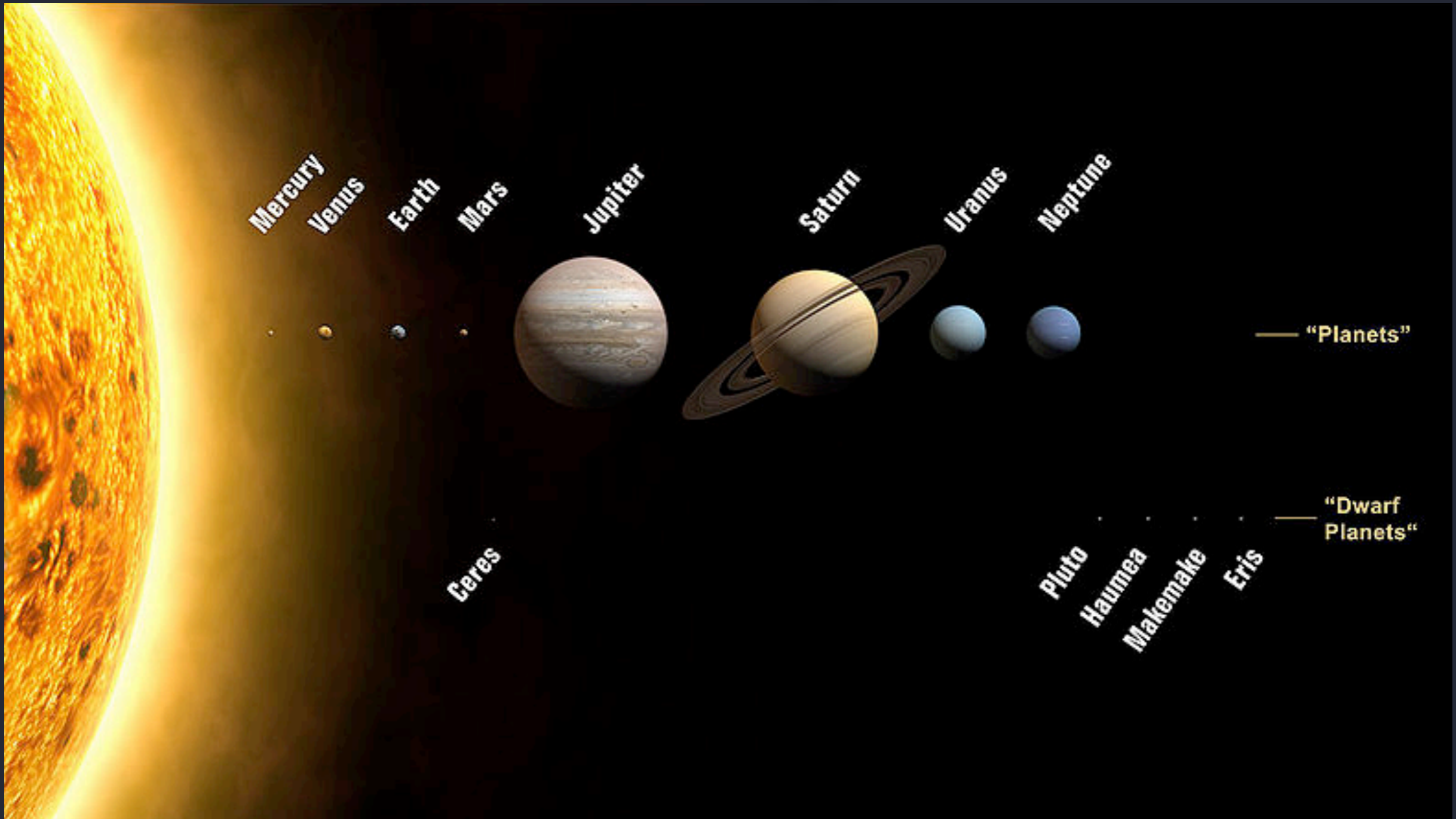
Regulus

Venus

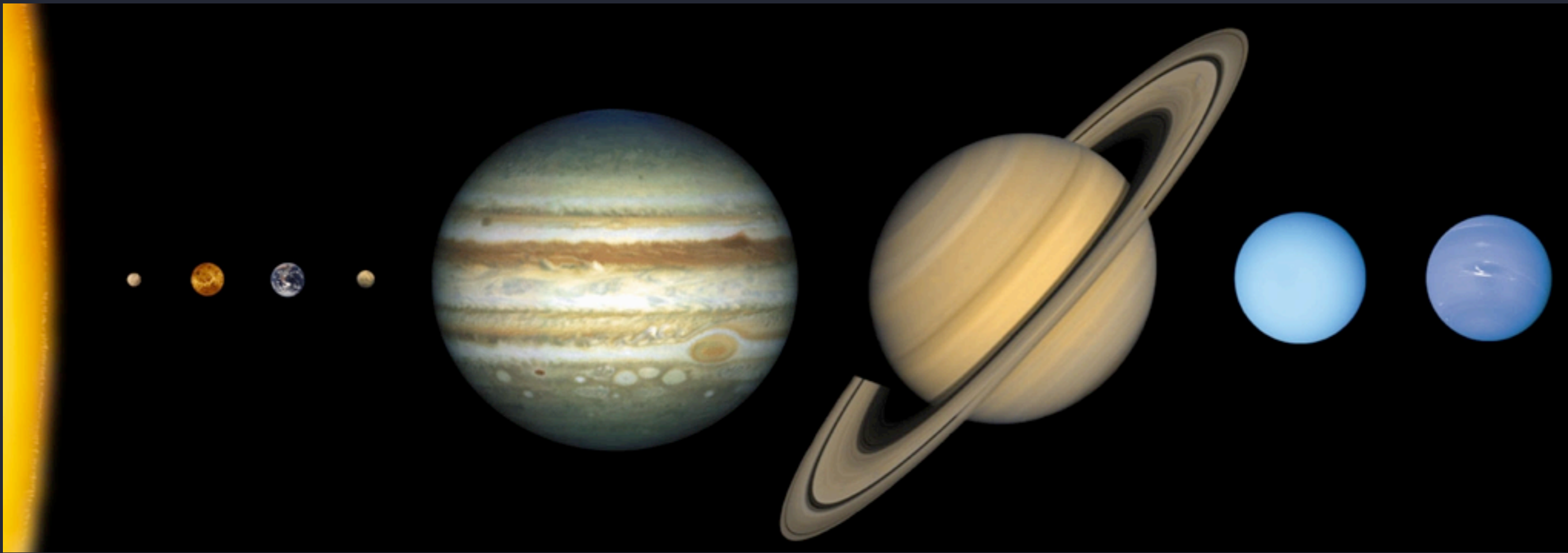
Mercury

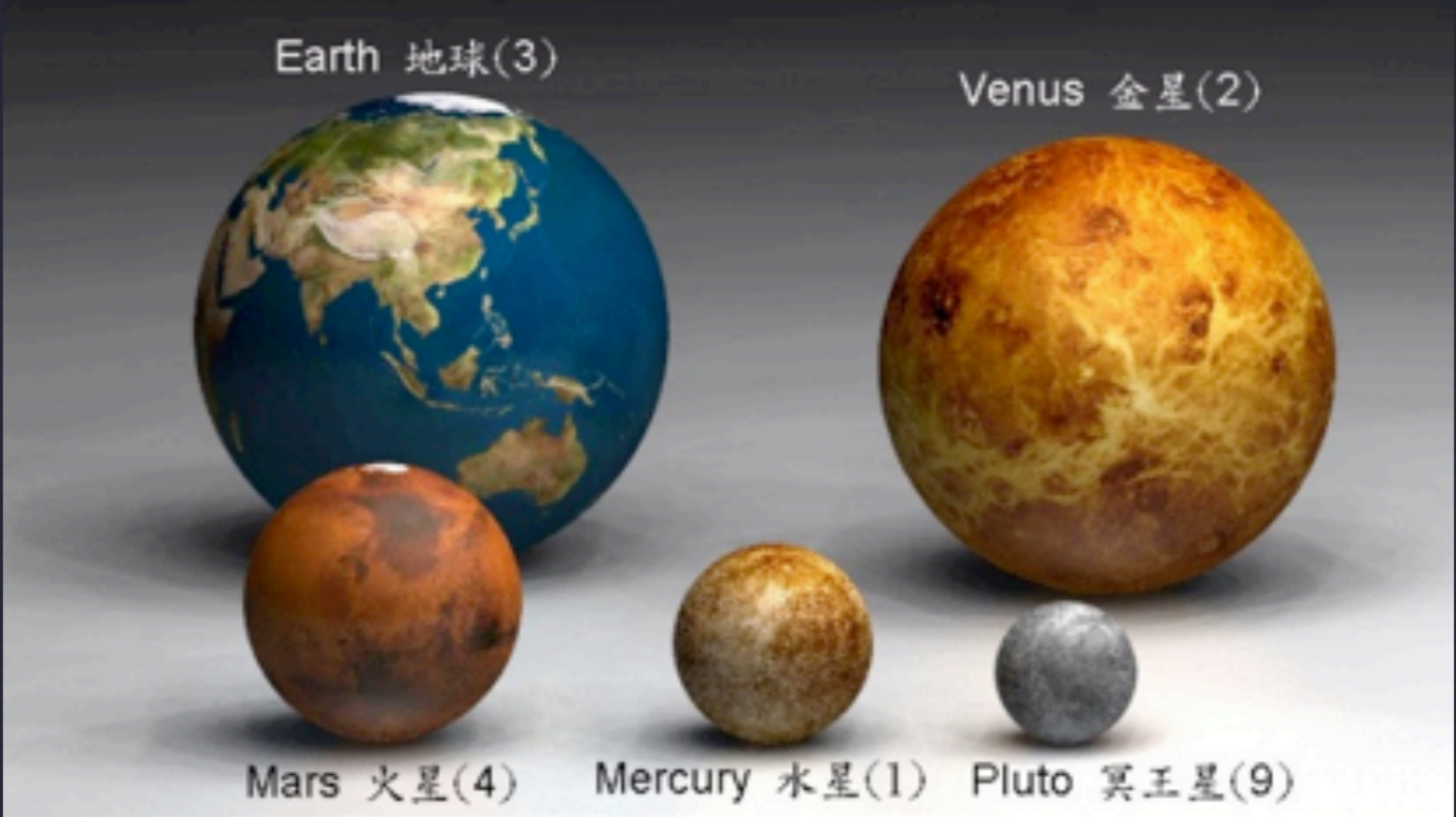


The Solar System



Sizes *are* to scale (but distances are not)





Earth 地球(3)

Venus 金星(2)

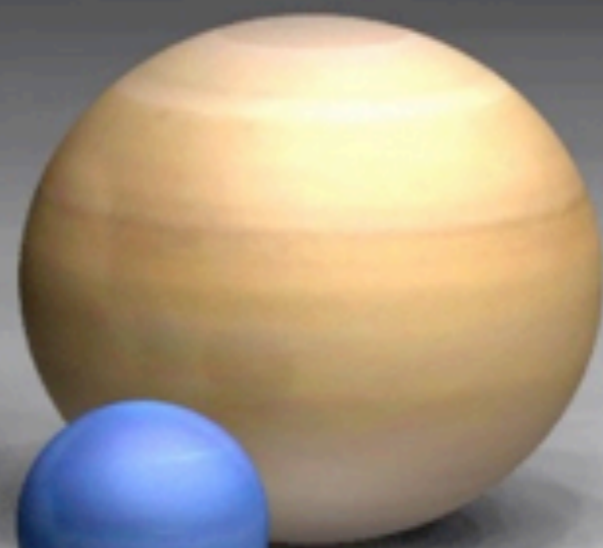
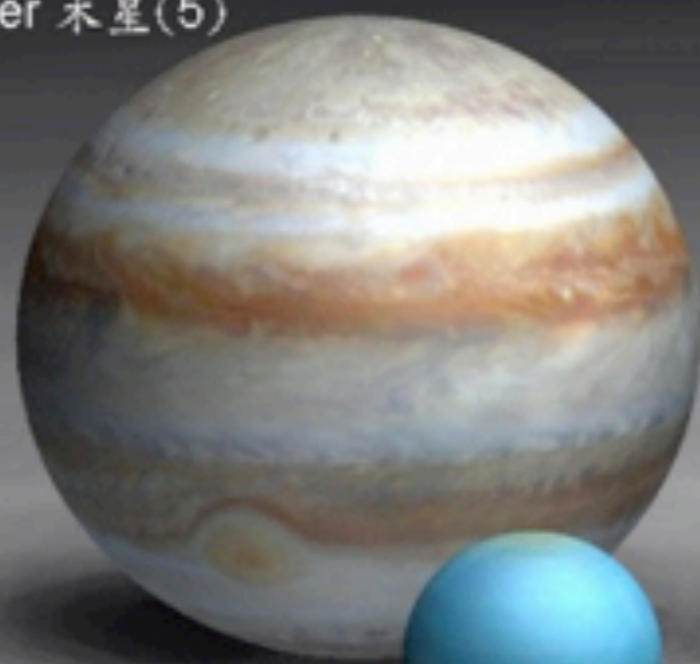
Mars 火星(4)

Mercury 水星(1)

Pluto 冥王星(9)

Jupiter 木星(5)

Saturn 土星(6)



Uranus 天王星(7)

Neptune 海王星(8)

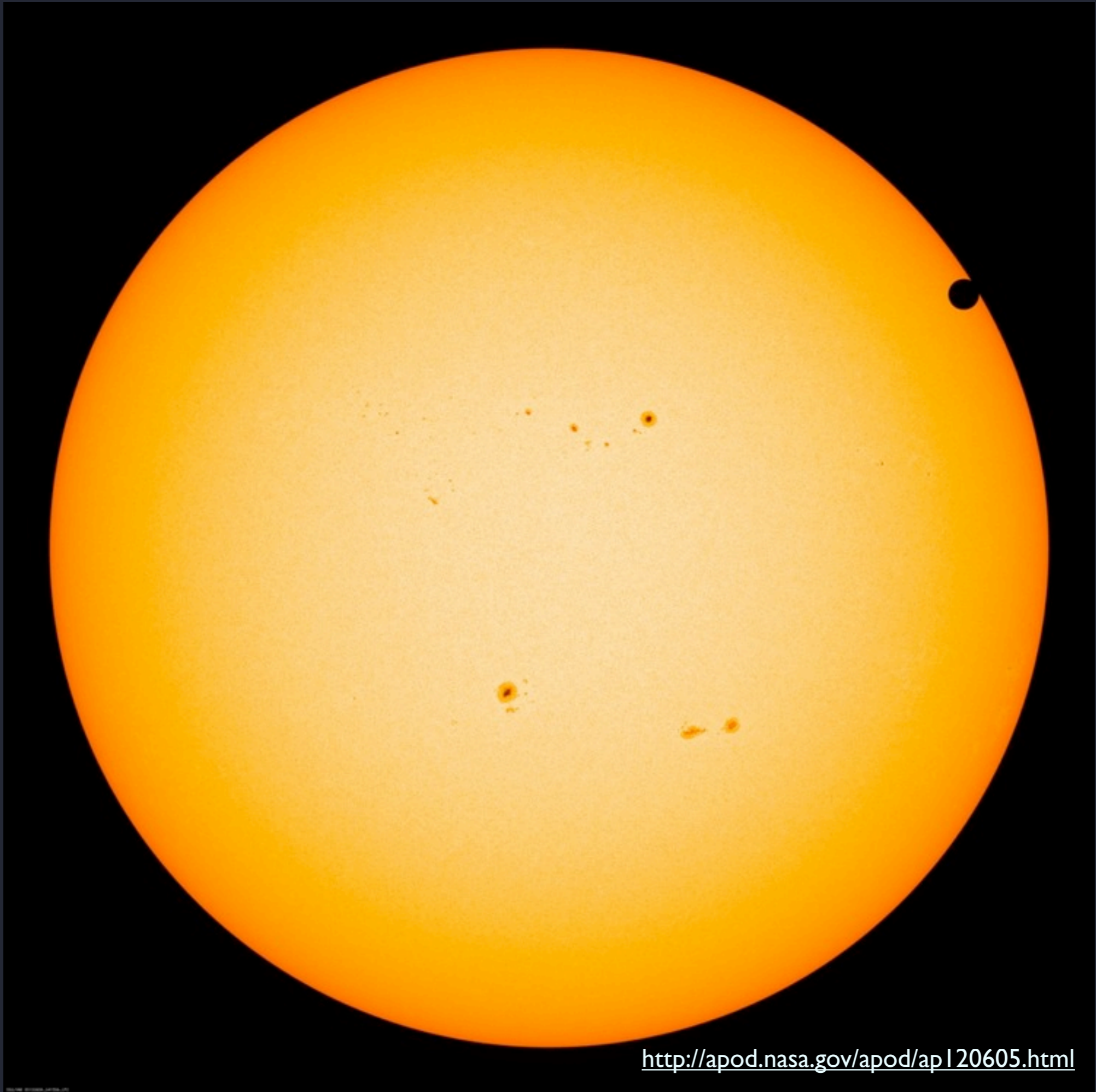


Sun 太陽



Sun



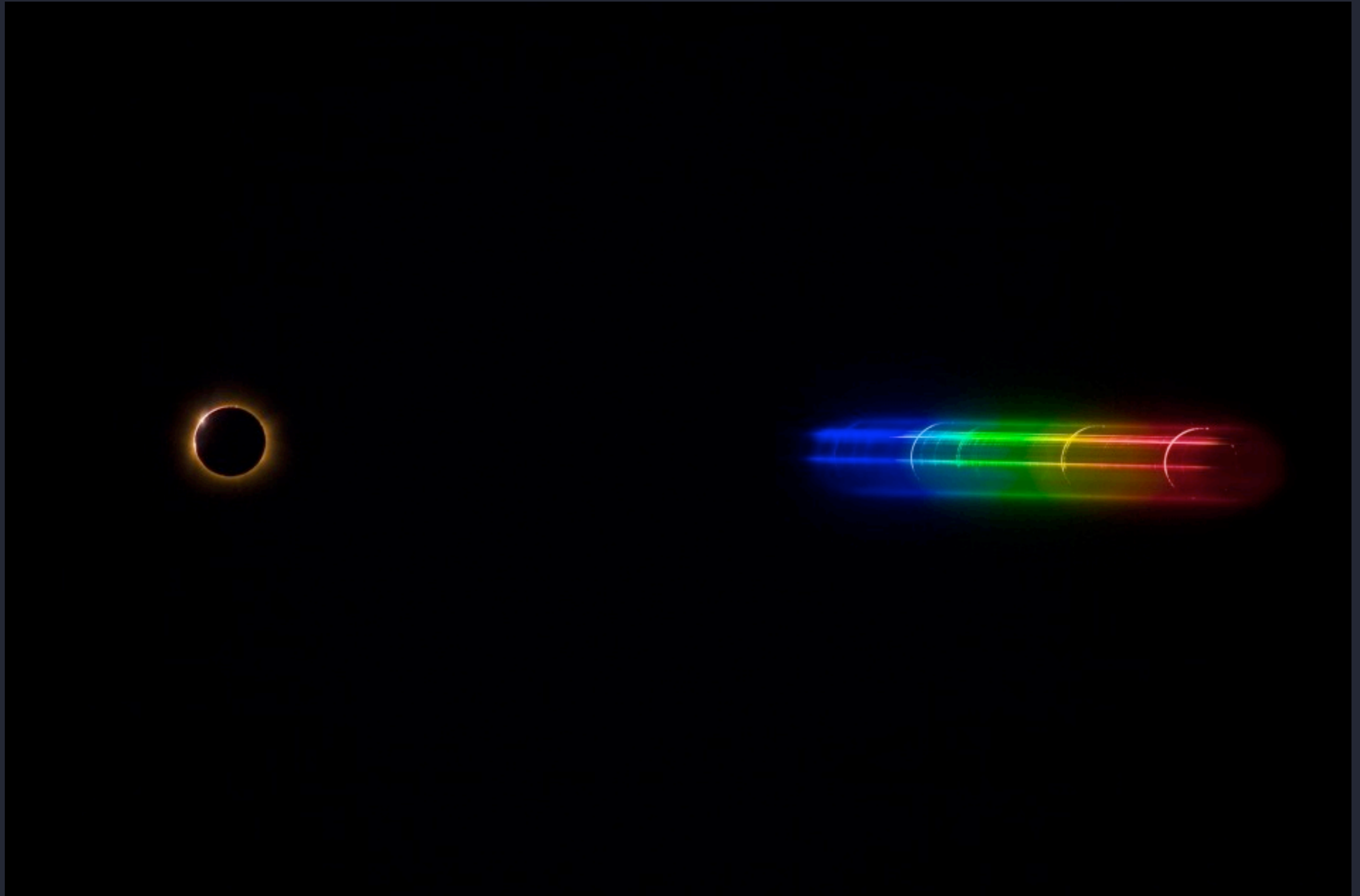


<http://apod.nasa.gov/apod/ap120605.html>

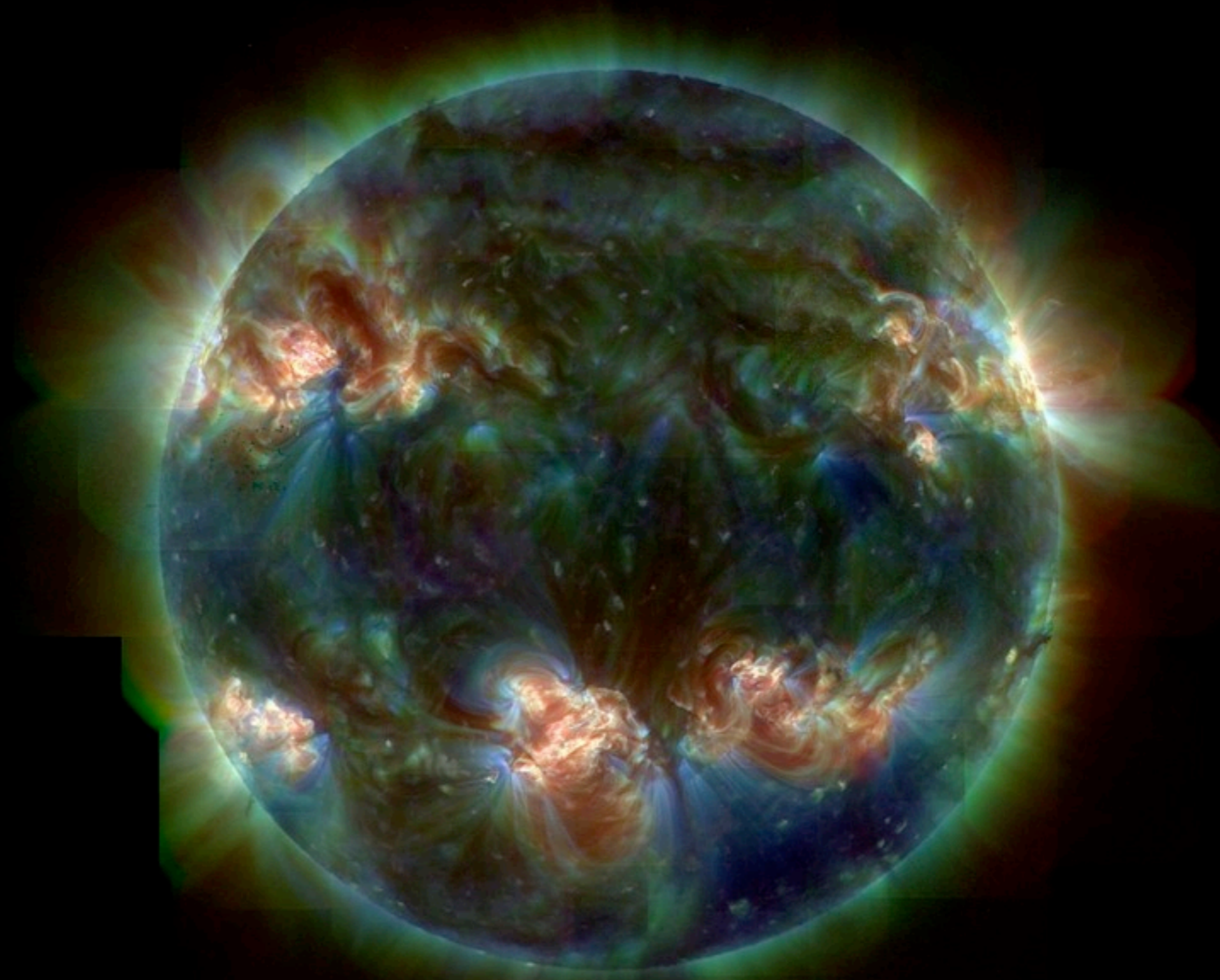
Solar eclipse showing the Sun's *corona*



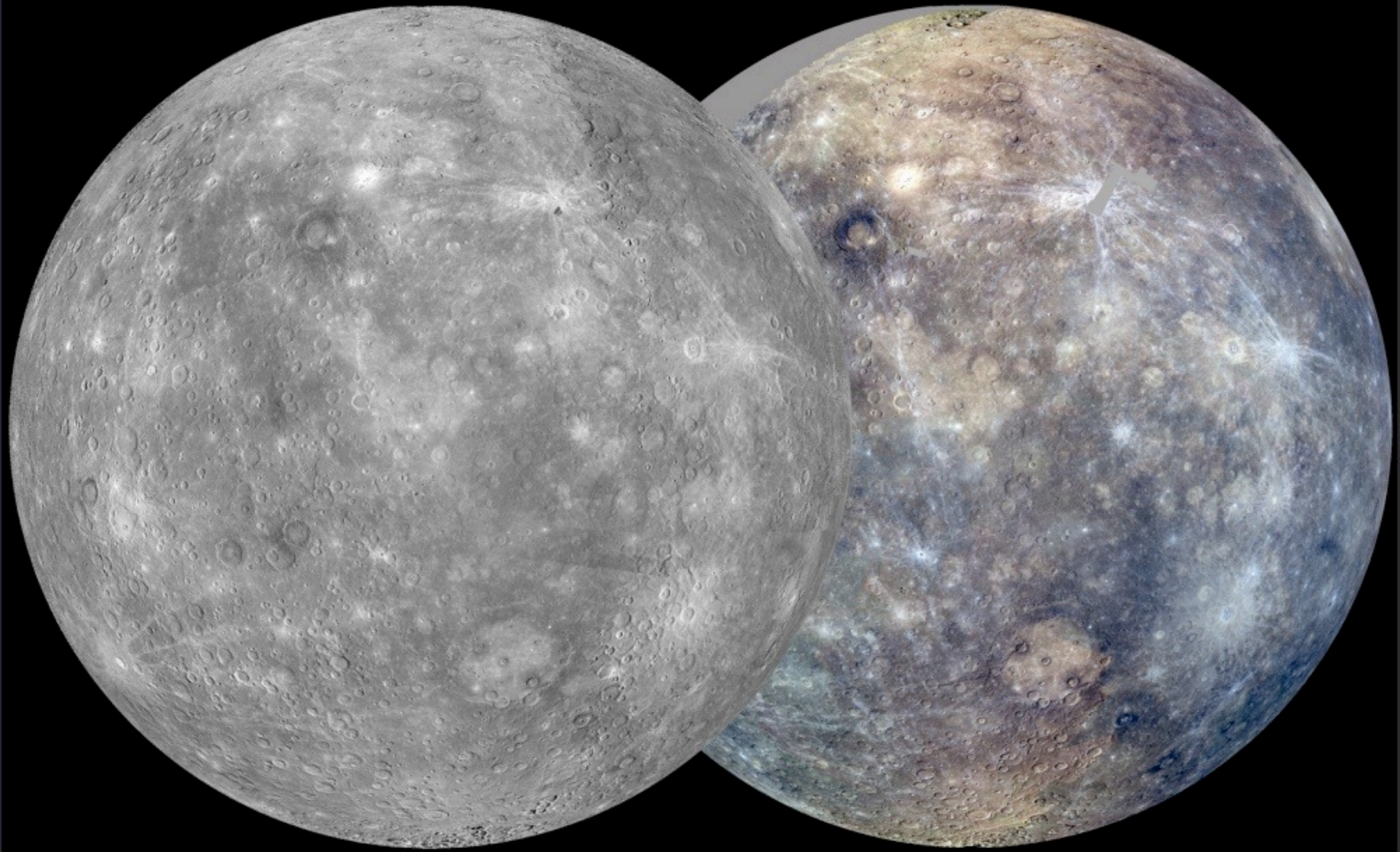
spectrum of the Sun (during an eclipse)

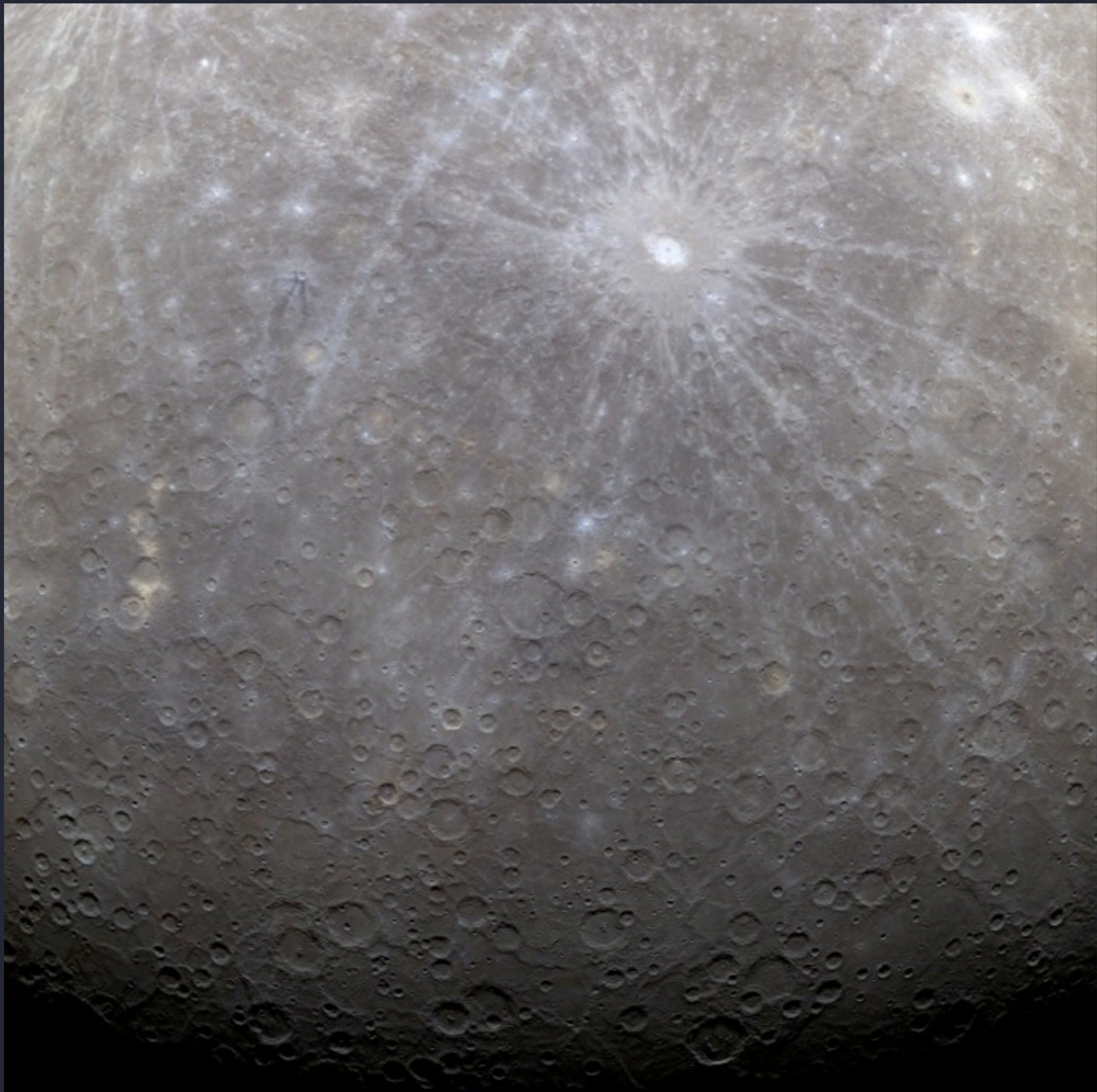


Ultraviolet/X-ray Sun



Mercury



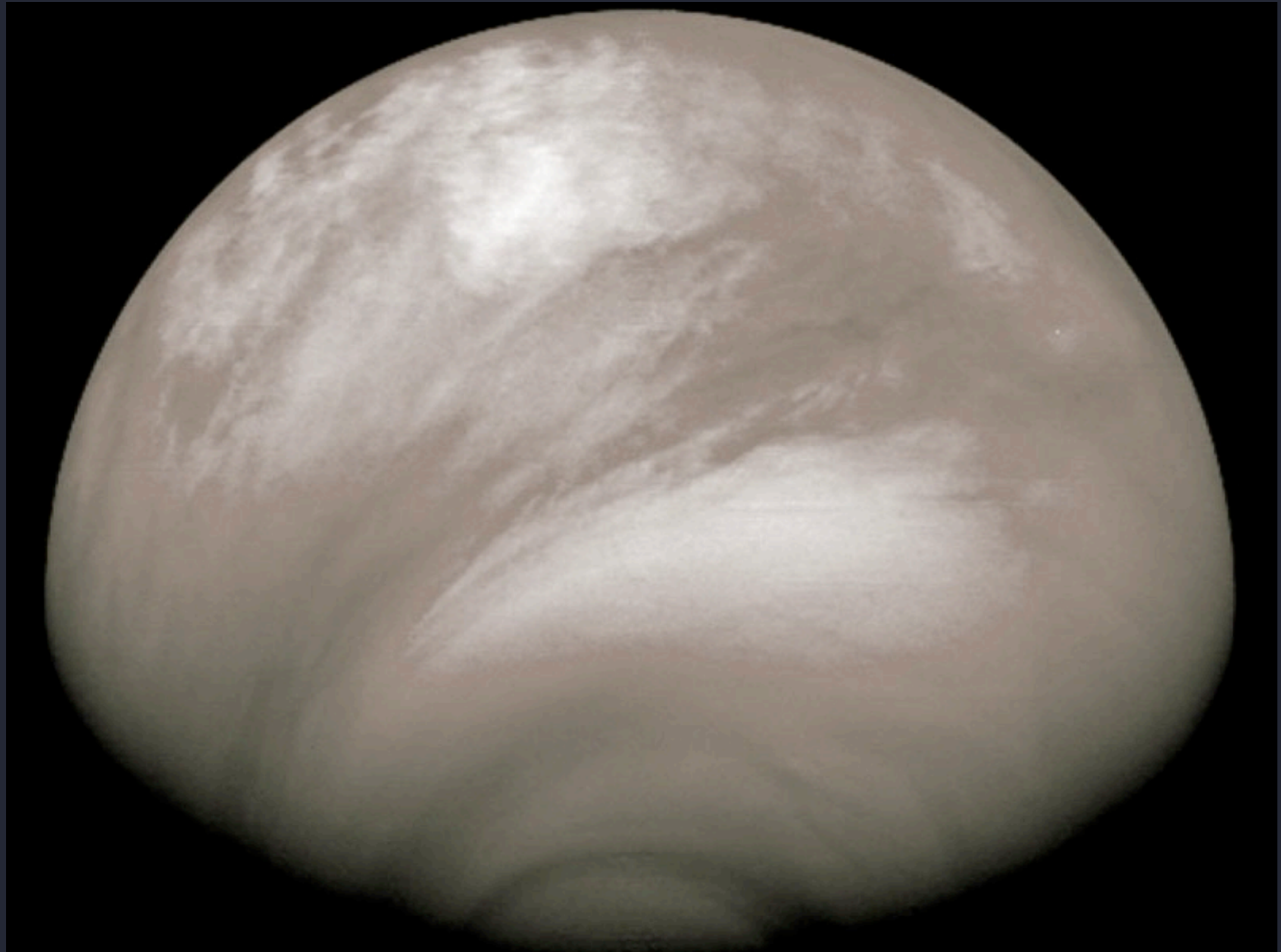


Venus

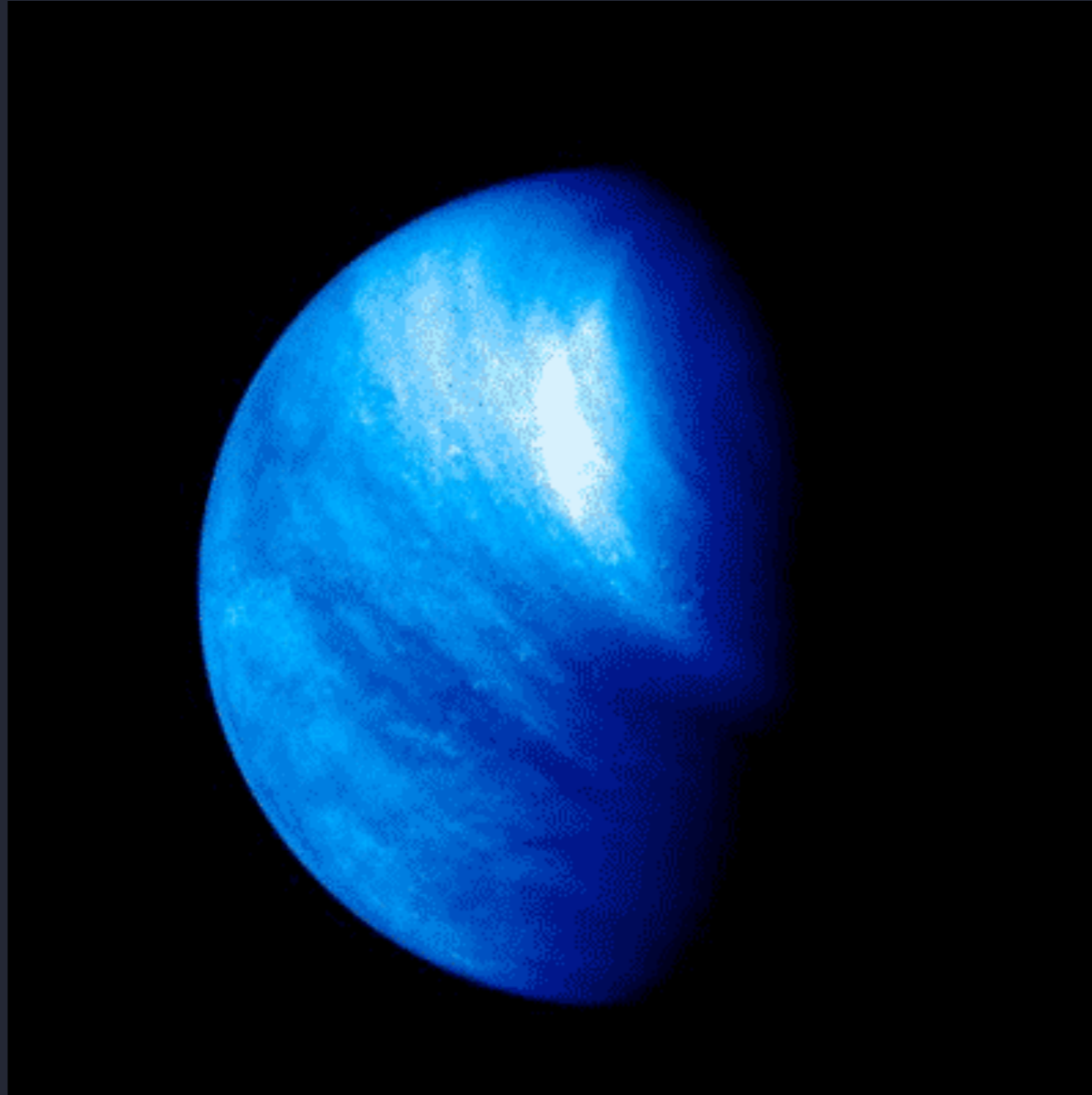


< Vesta

< Ceres



<http://apod.nasa.gov/apod/ap080226.html>



<http://apod.nasa.gov/apod/ap060717.html>

Earth from the International Space Station (ISS)



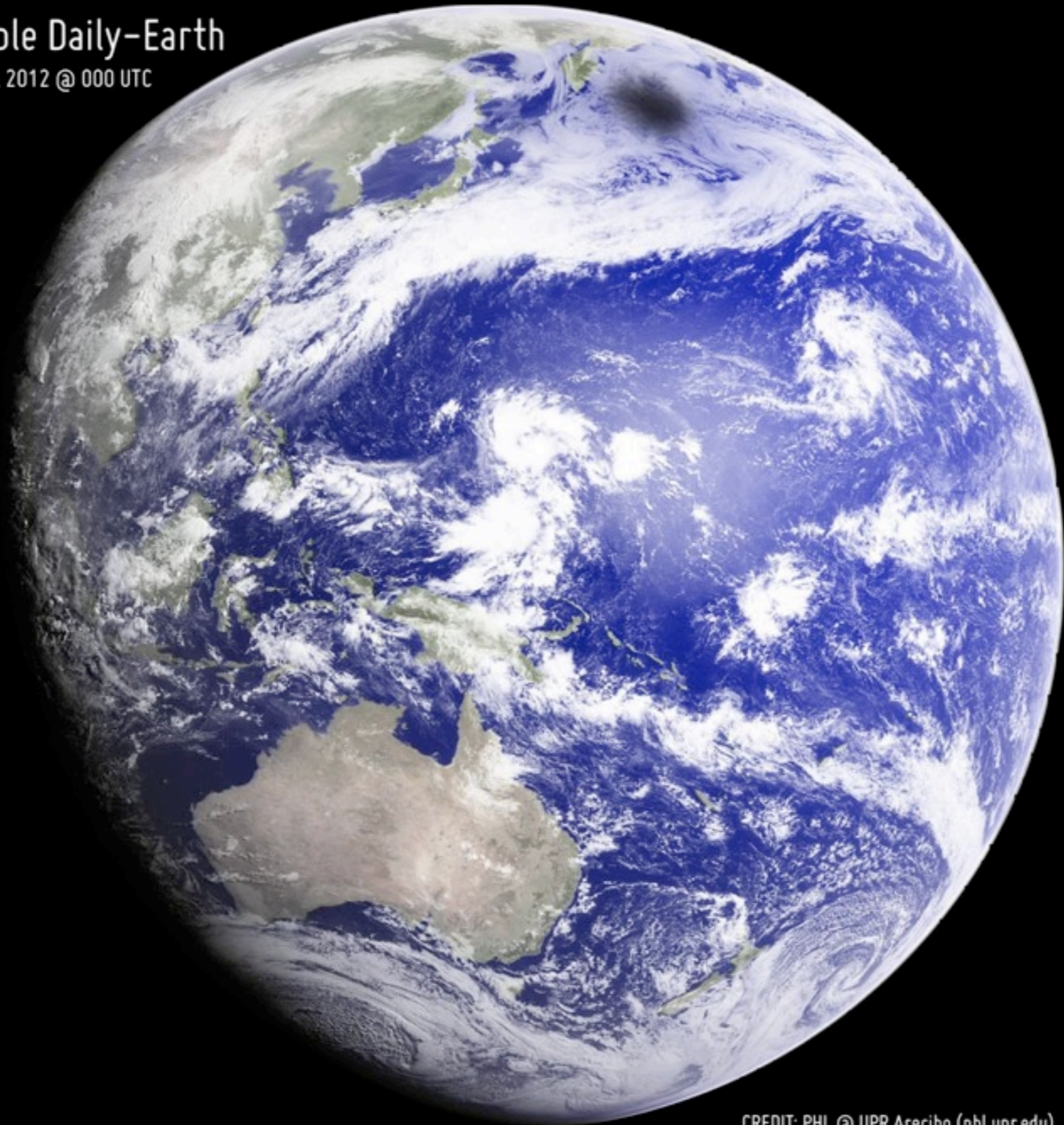
Hubble Space Telescope (HST) 300 km above Earth



The Earth from space

Visible Daily-Earth

May 21, 2012 @ 000 UTC



CREDIT: PHL @ UPR Arcibo (phl.upr.edu)

<http://apod.nasa.gov/apod/ap120530.html>

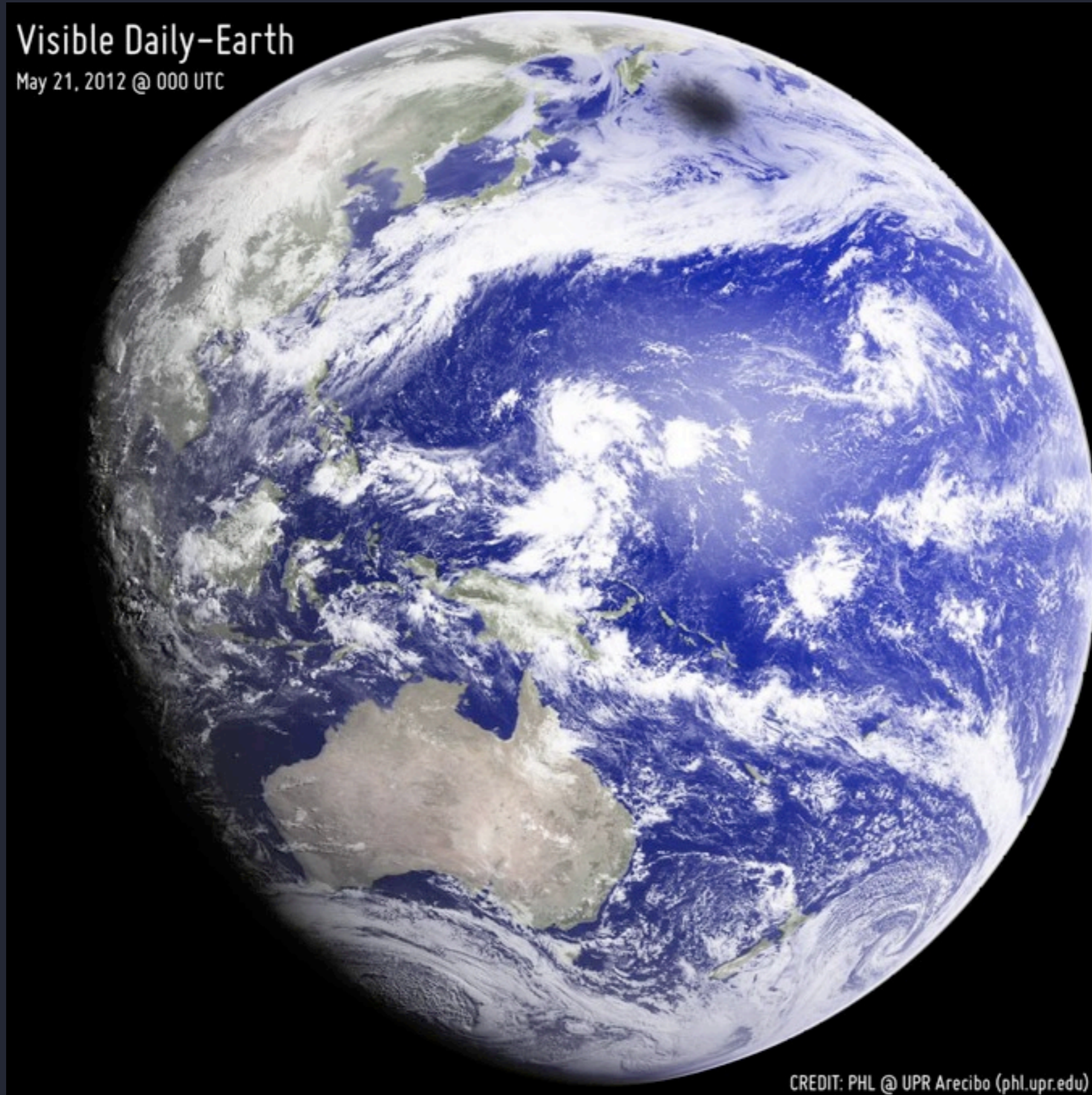
Solar eclipse: Moon *in front* of Sun



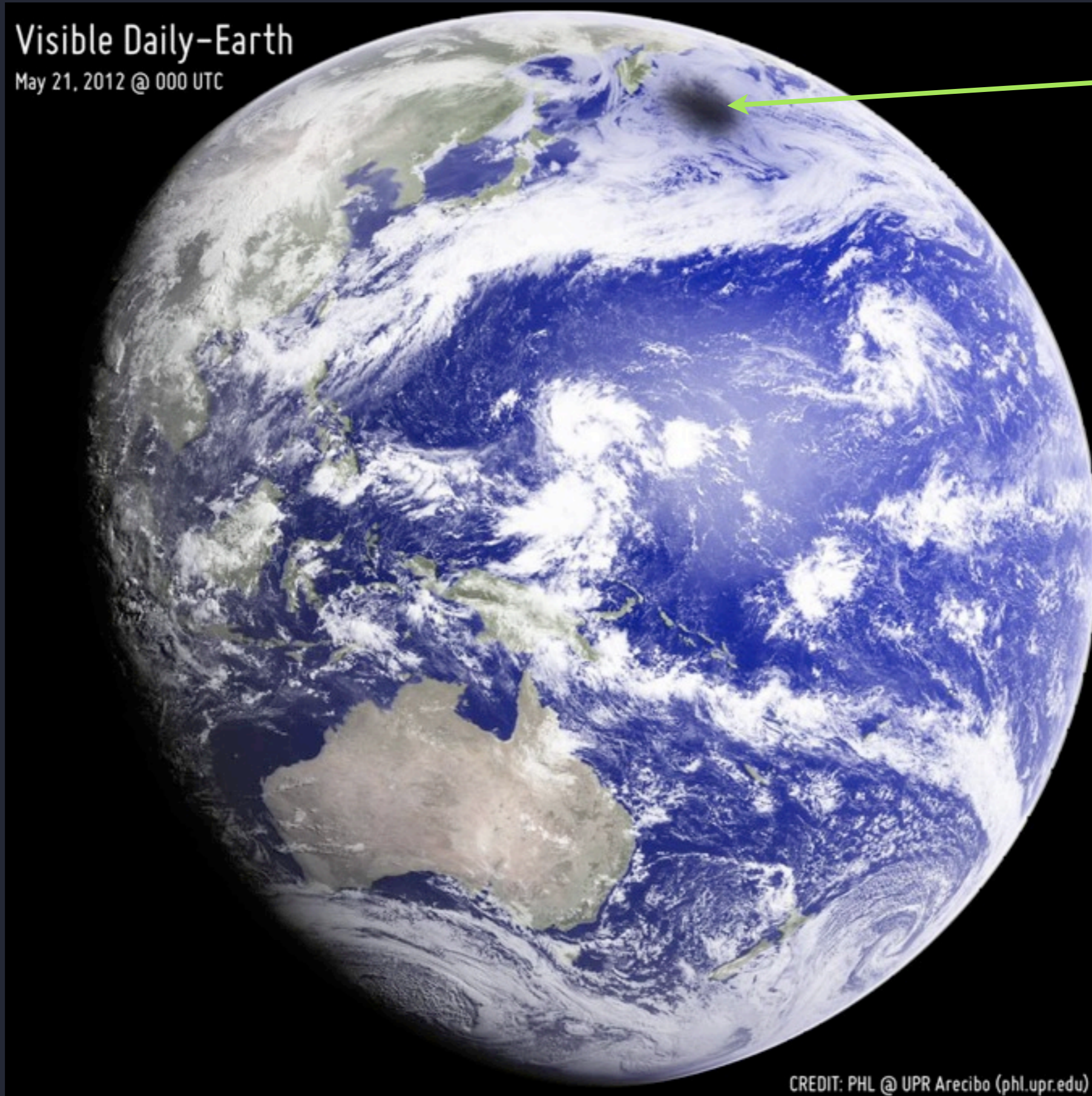
CHRIS COOK PHOTOGRAPHY



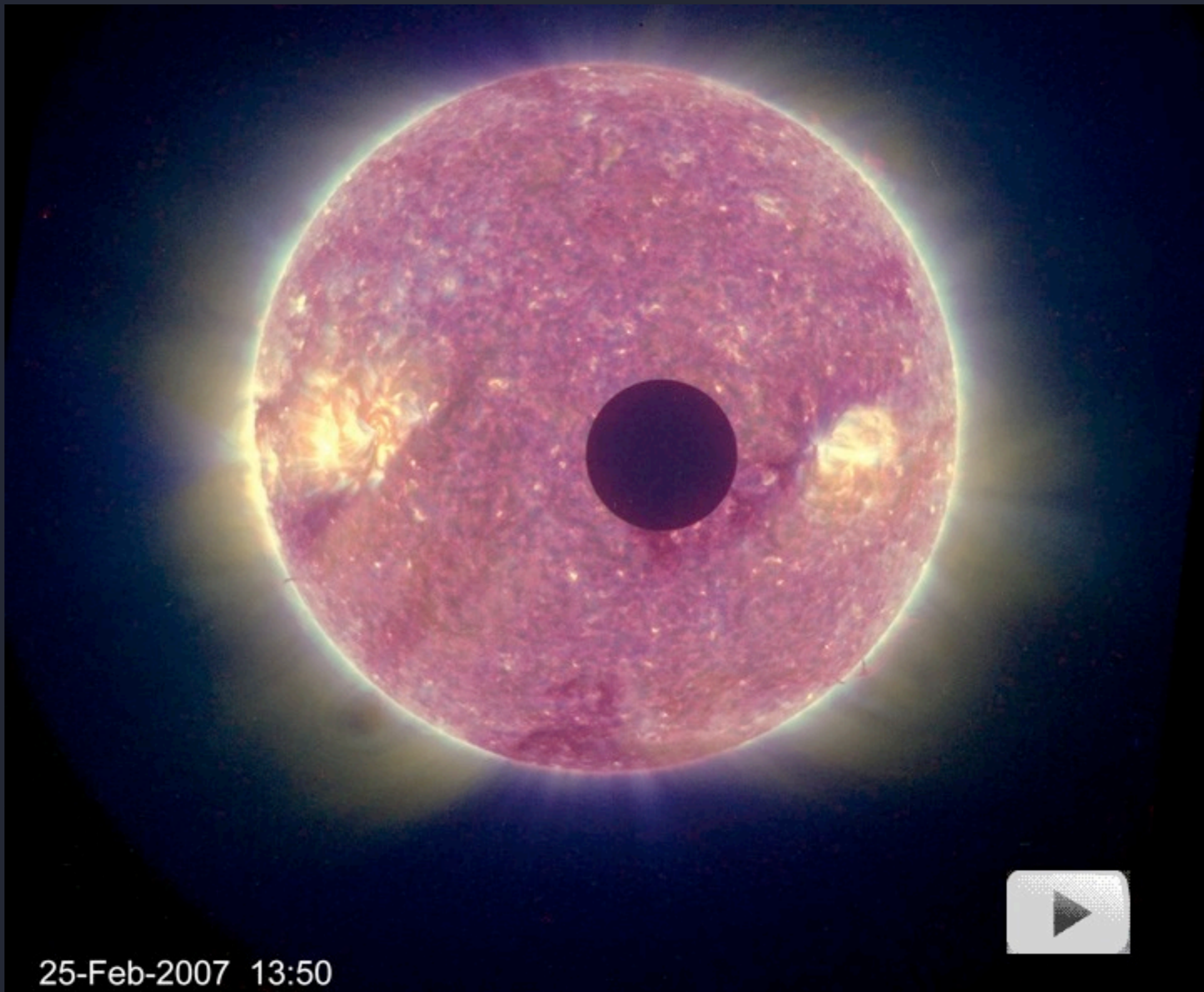
There's a solar eclipse going on...where? Can you see it?



There's a solar eclipse going on...where? Can you see it?



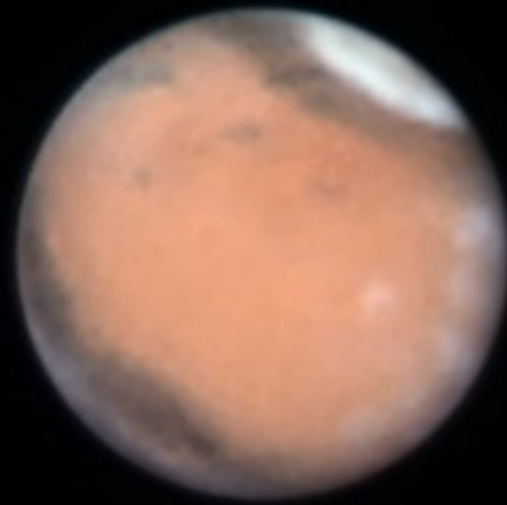
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25-Feb-2007 13:50

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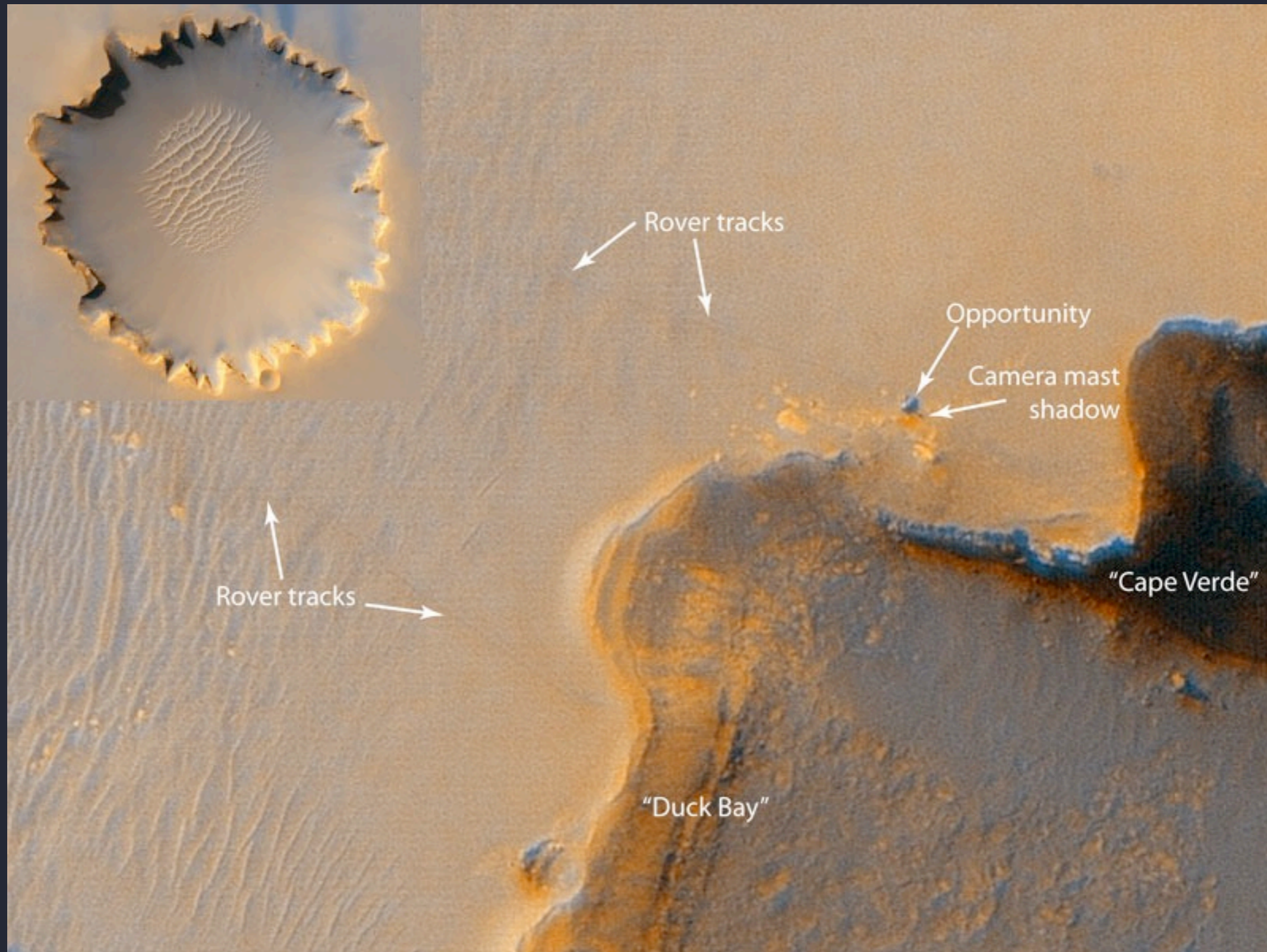
Mars



Mars near opposition

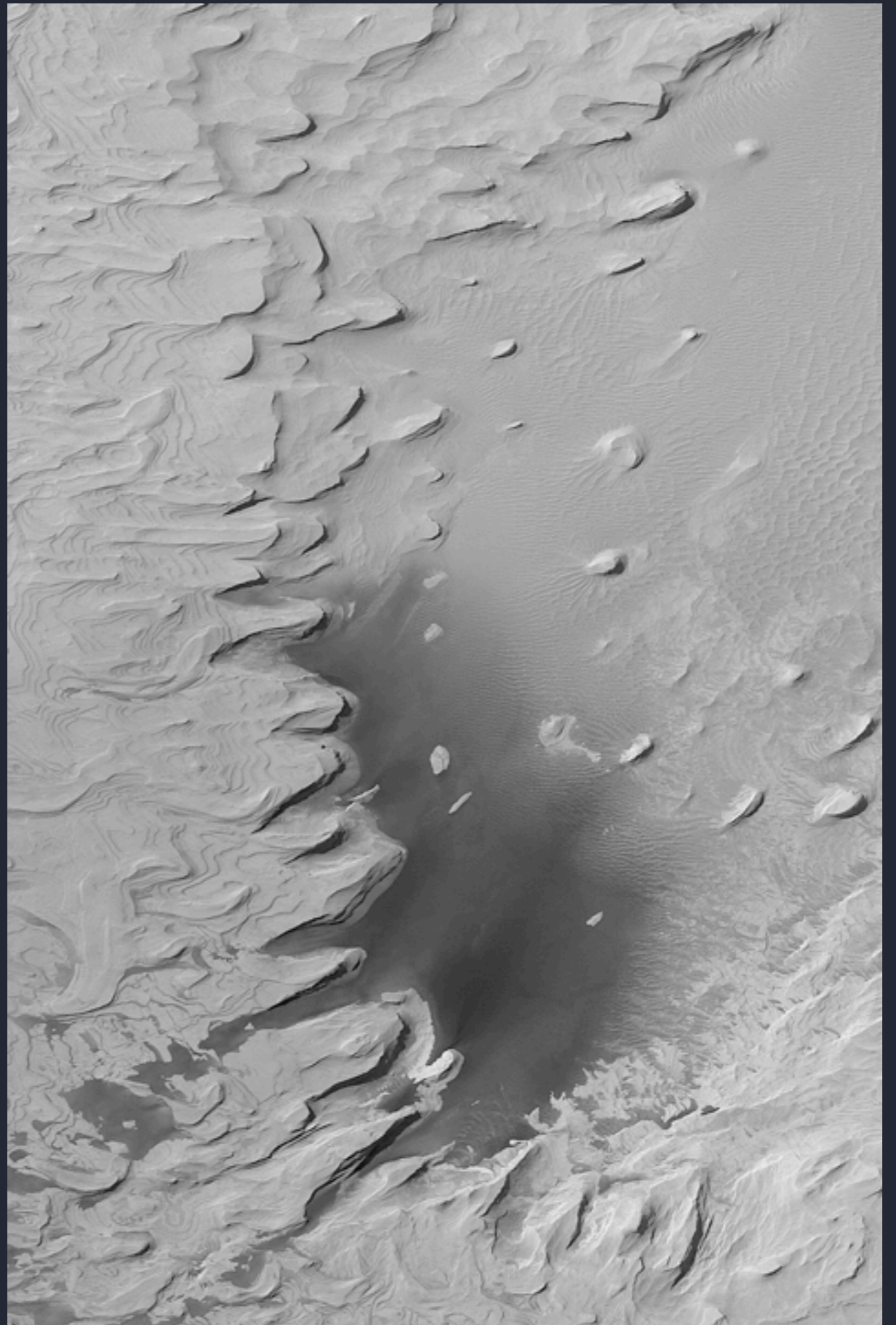
Alan Friedman / www.avertedimagination.com

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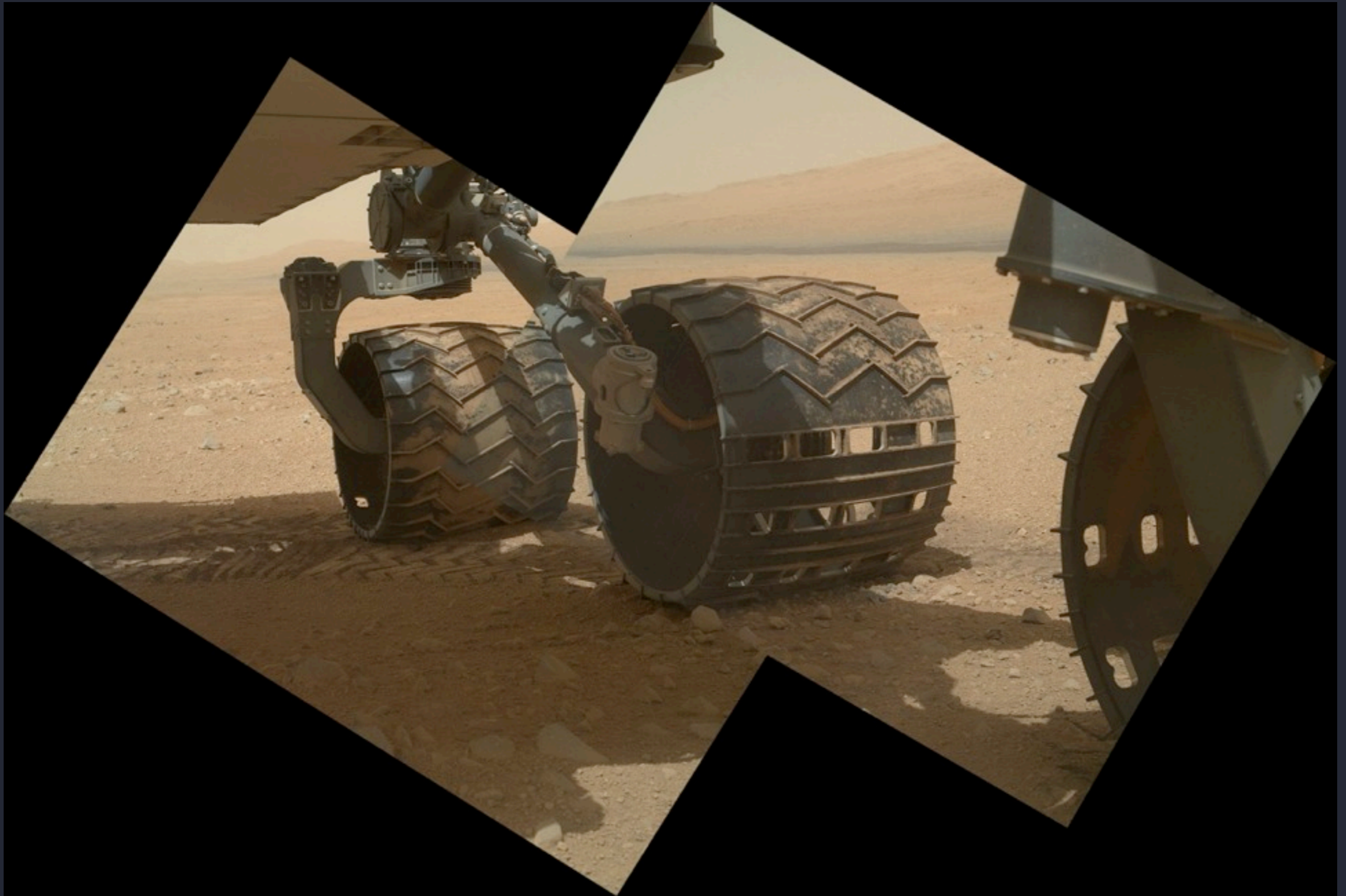




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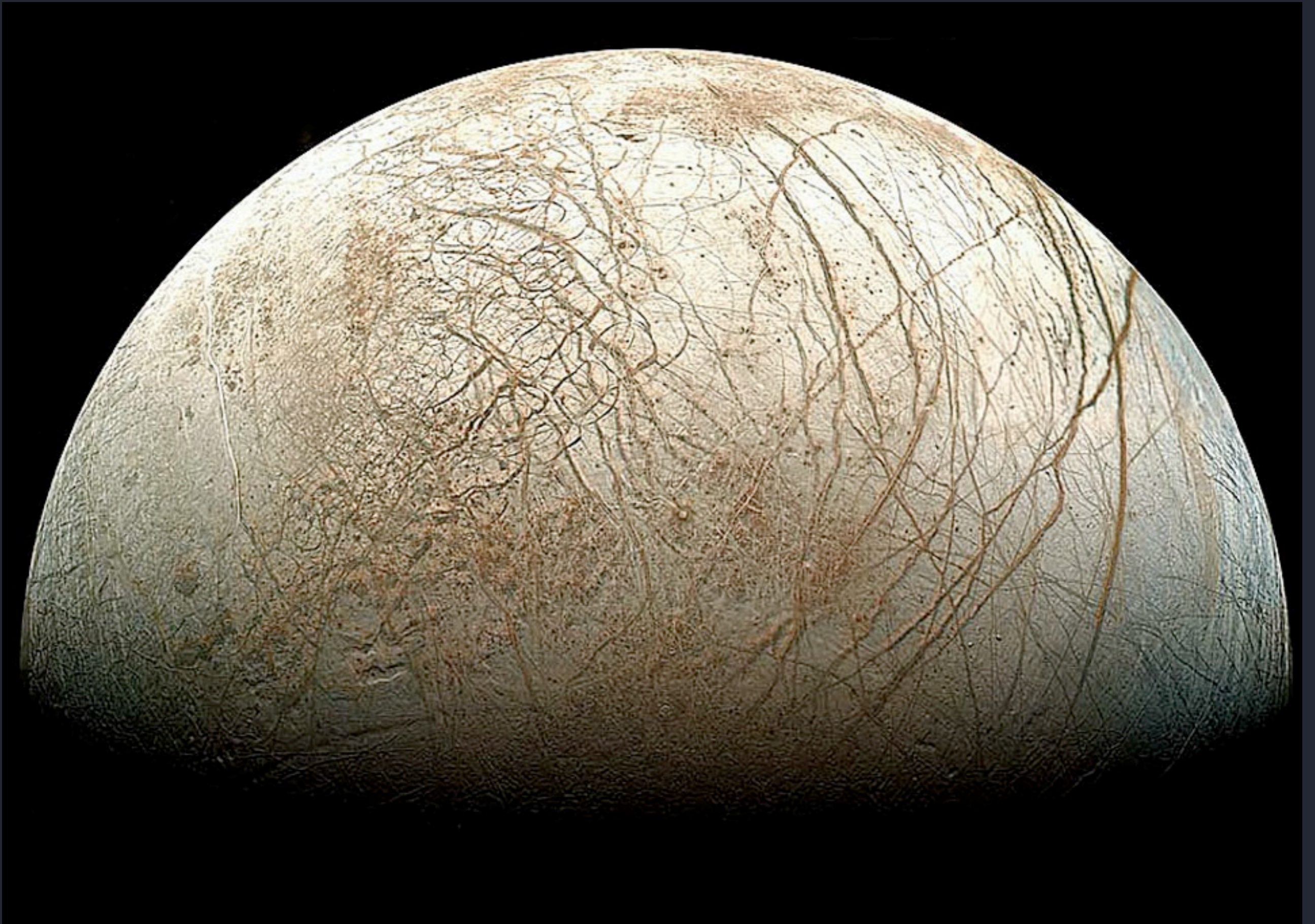


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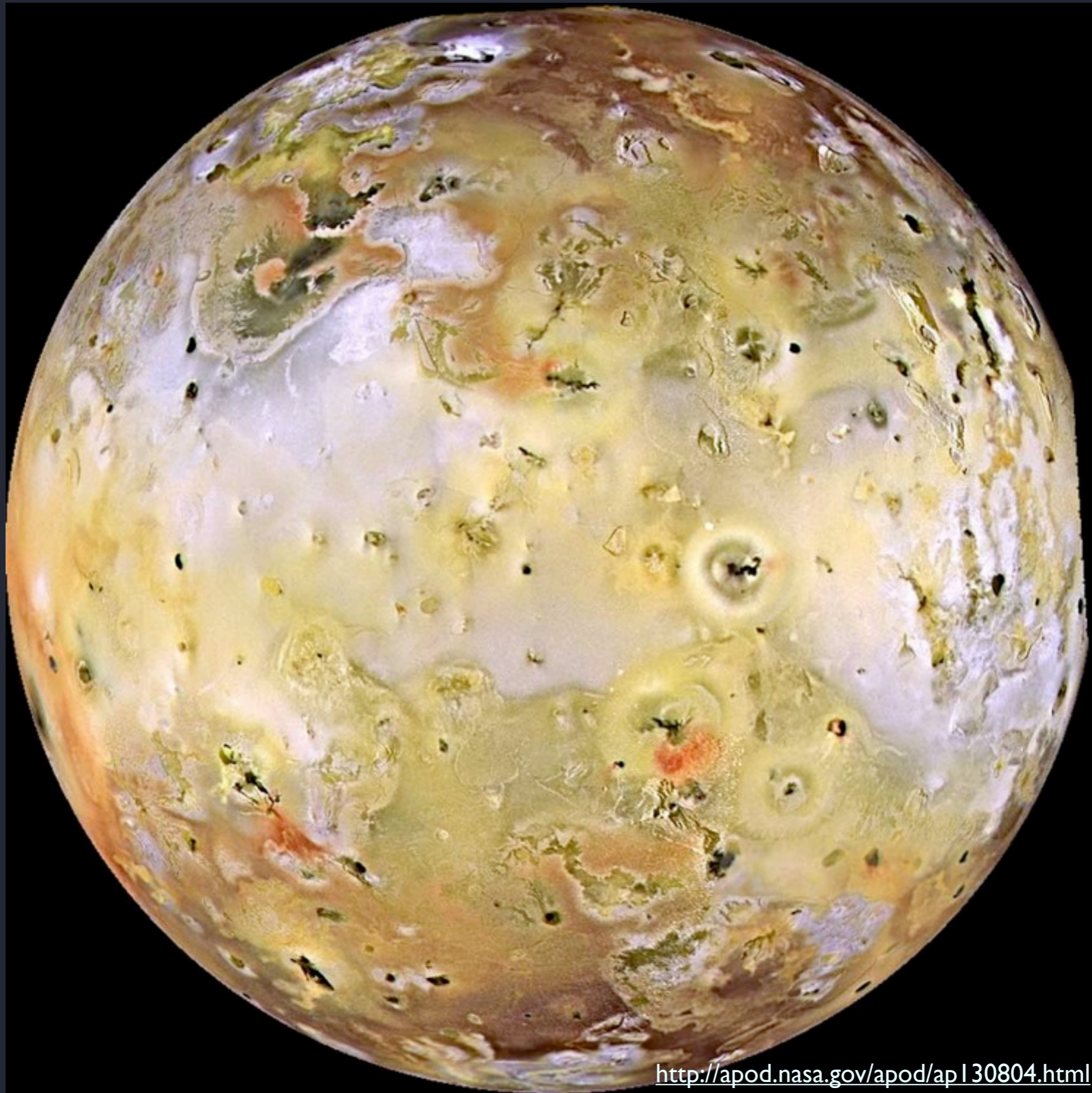


Jupiter

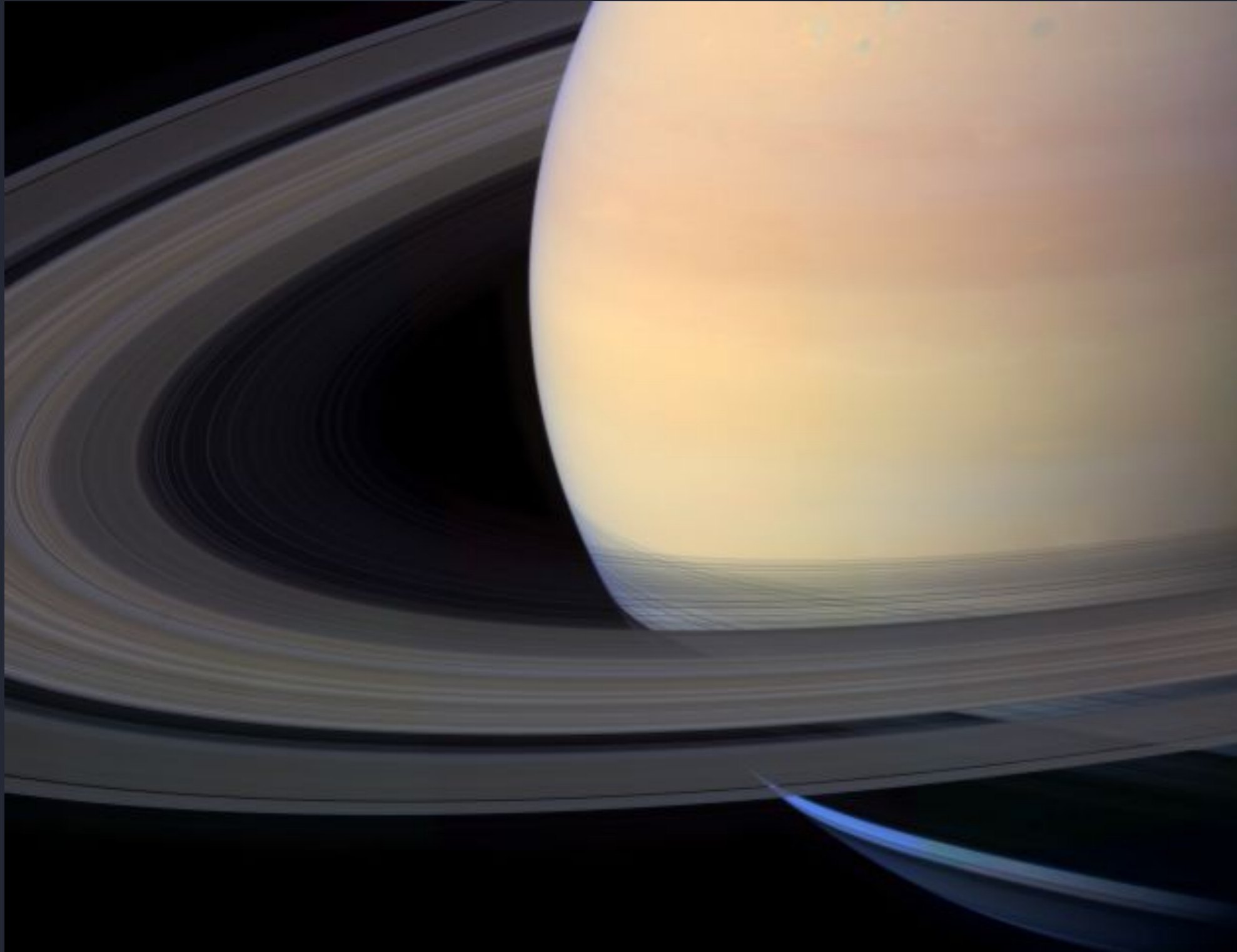




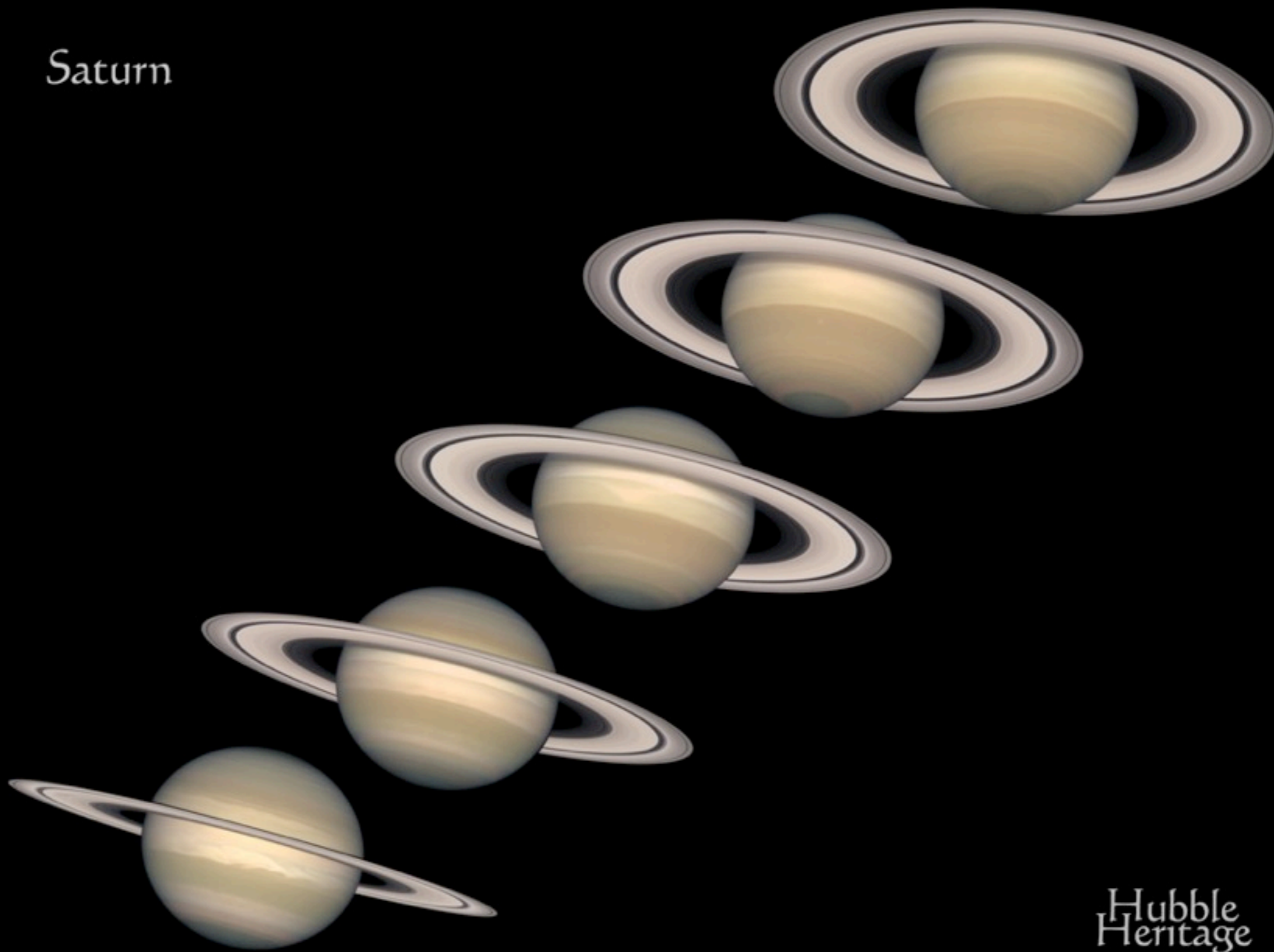




Saturn



Saturn

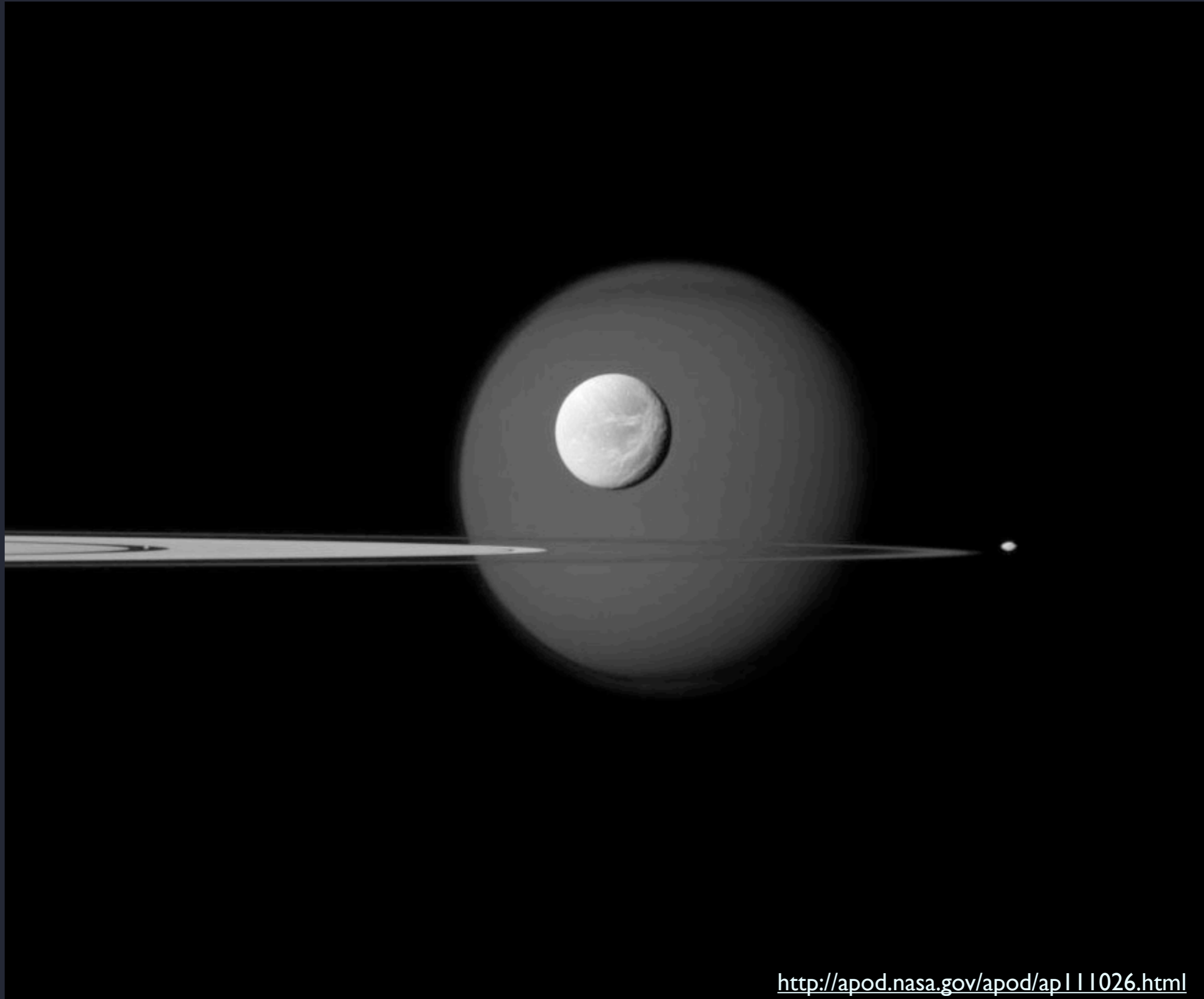


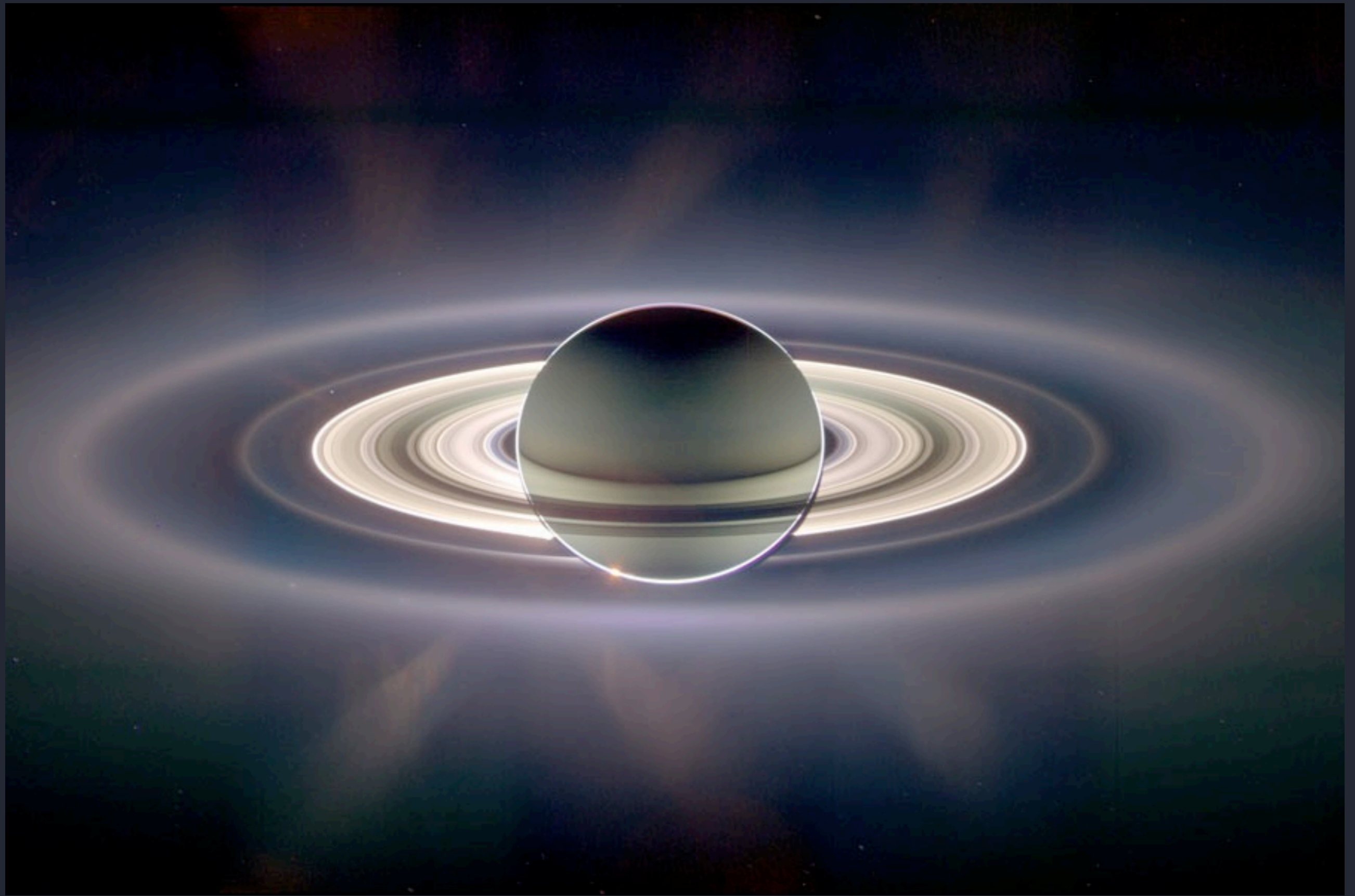
Hubble
Heritage

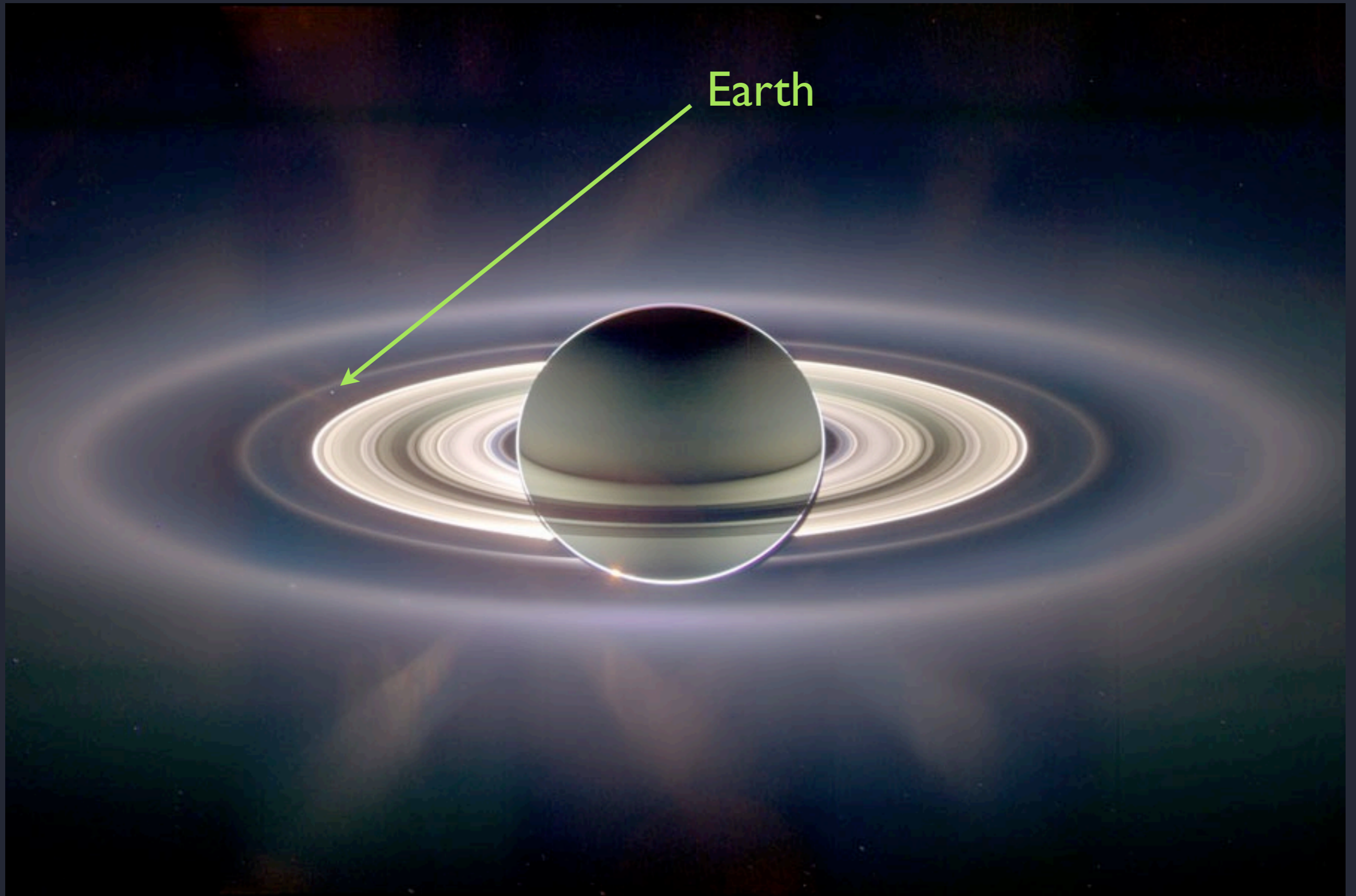
NASA and The Hubble Heritage Team (STScI/AURA) • Hubble Space Telescope WFPC2 • STScI-PRC01-15





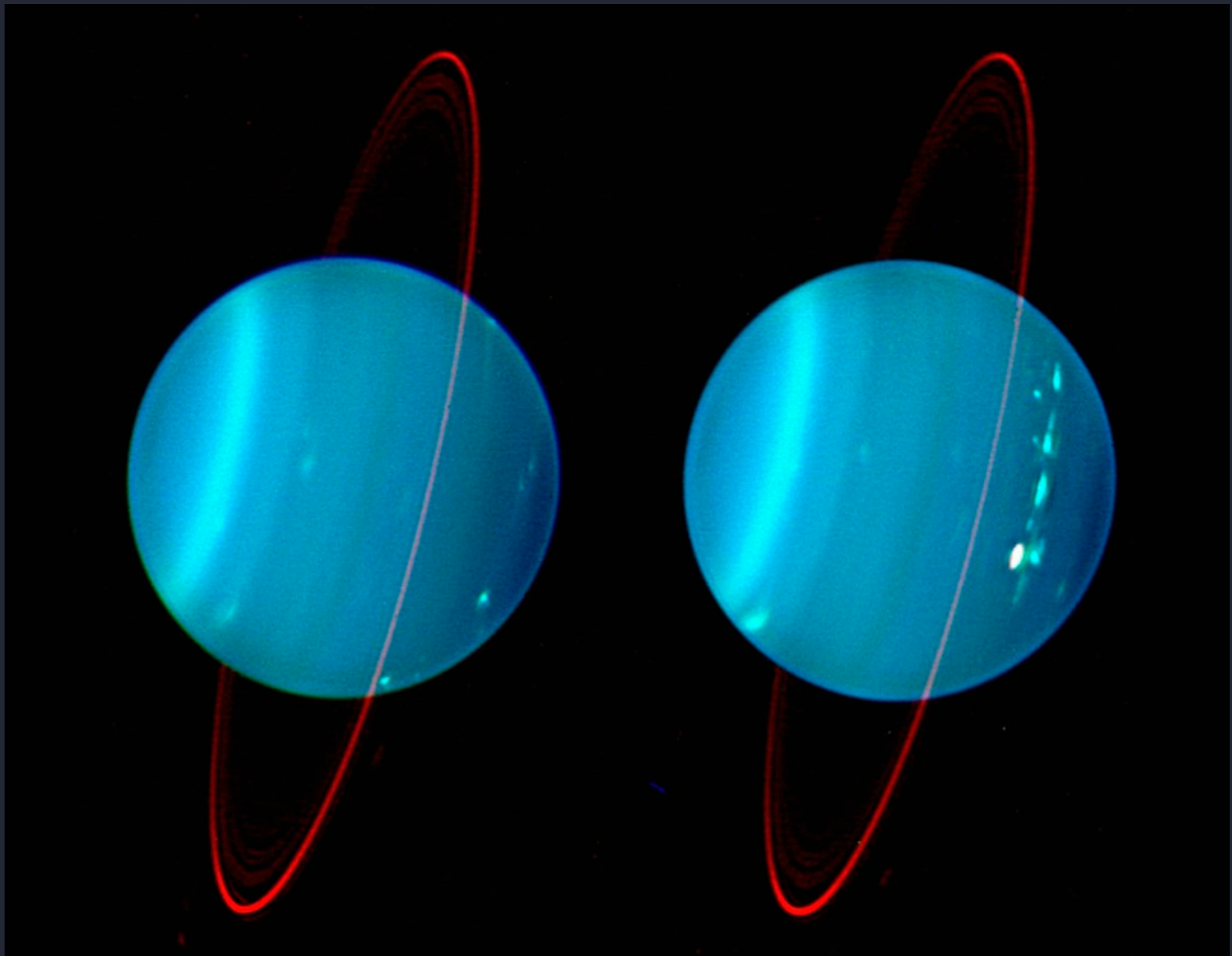




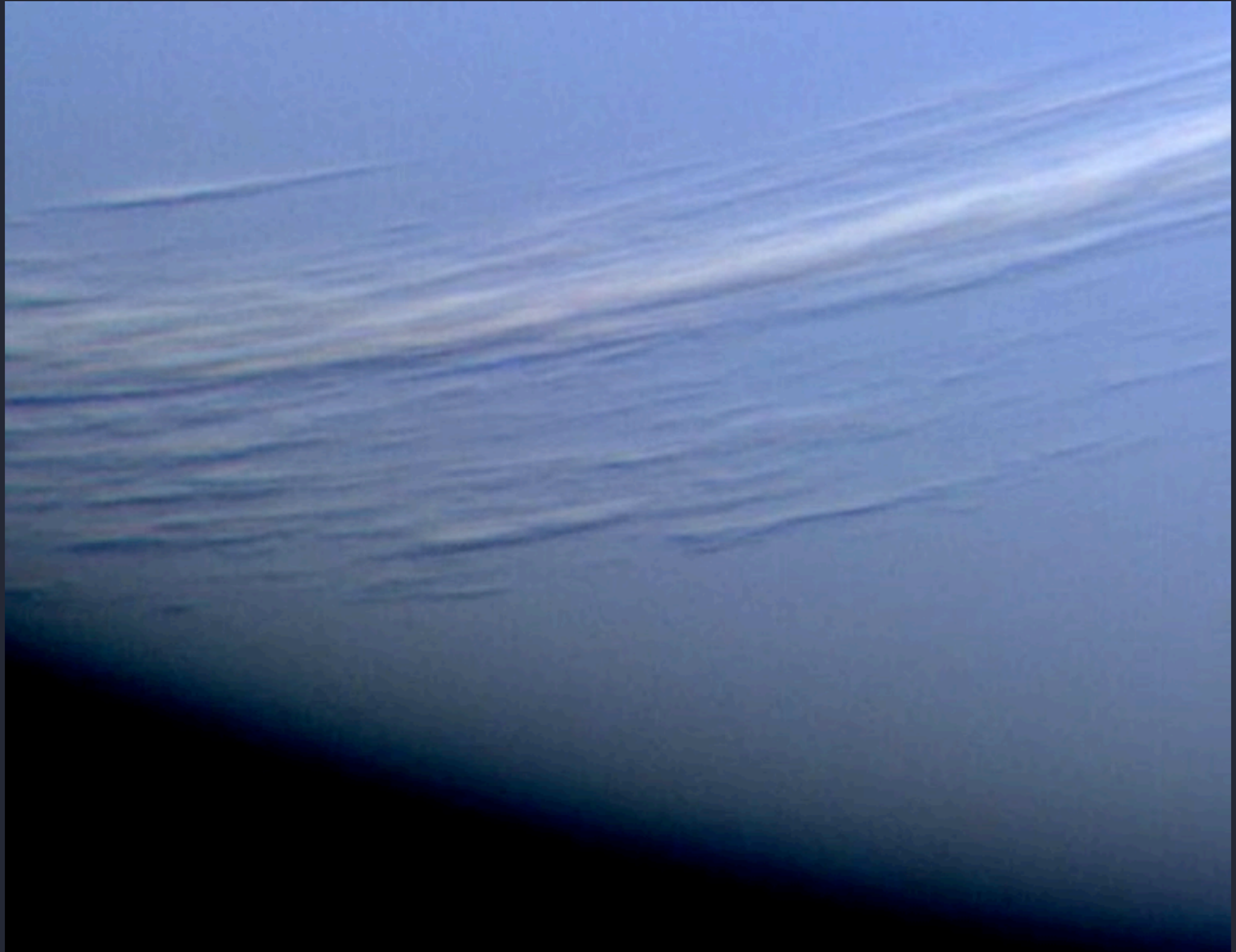


Earth

Uranus



Neptune

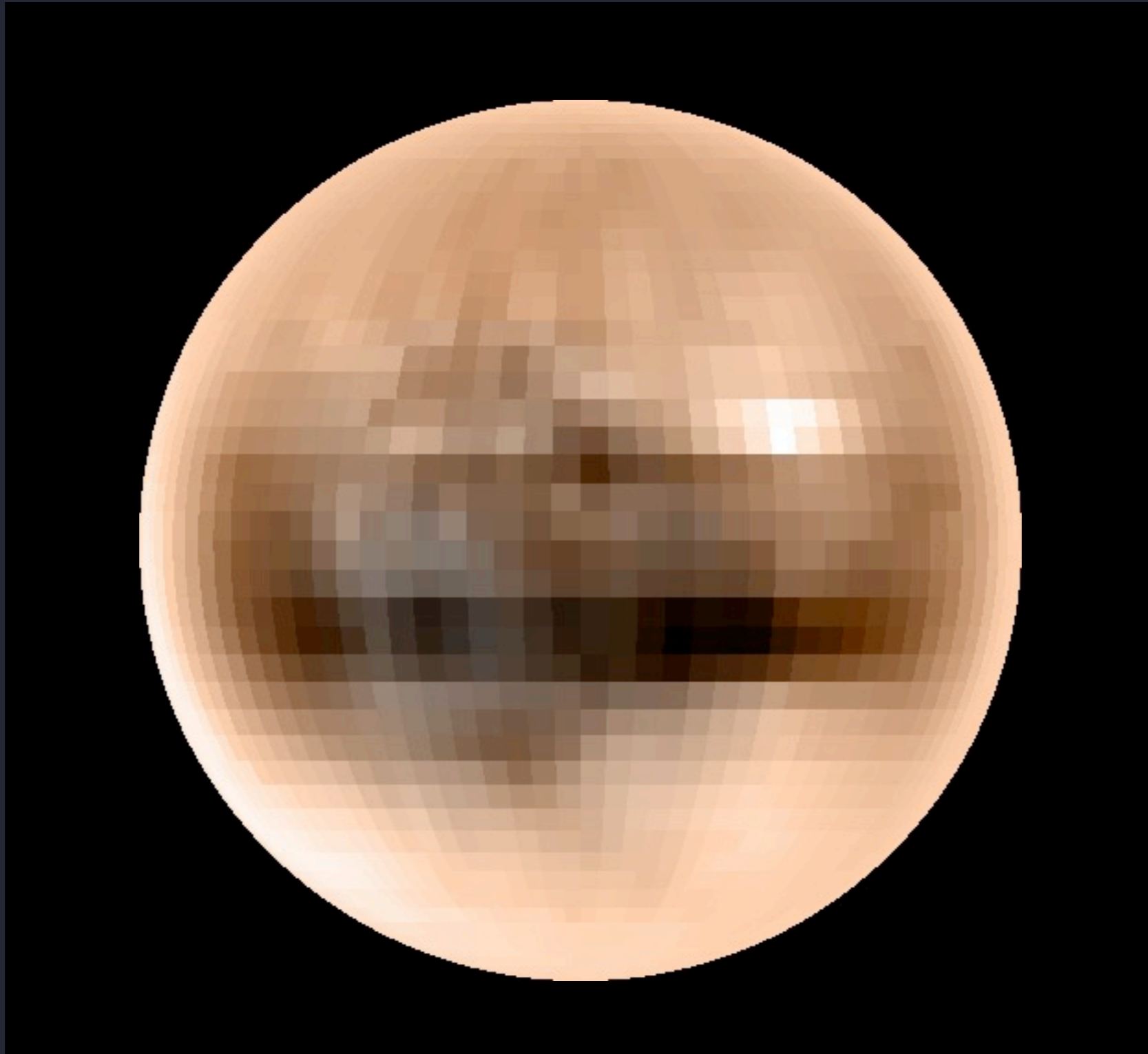


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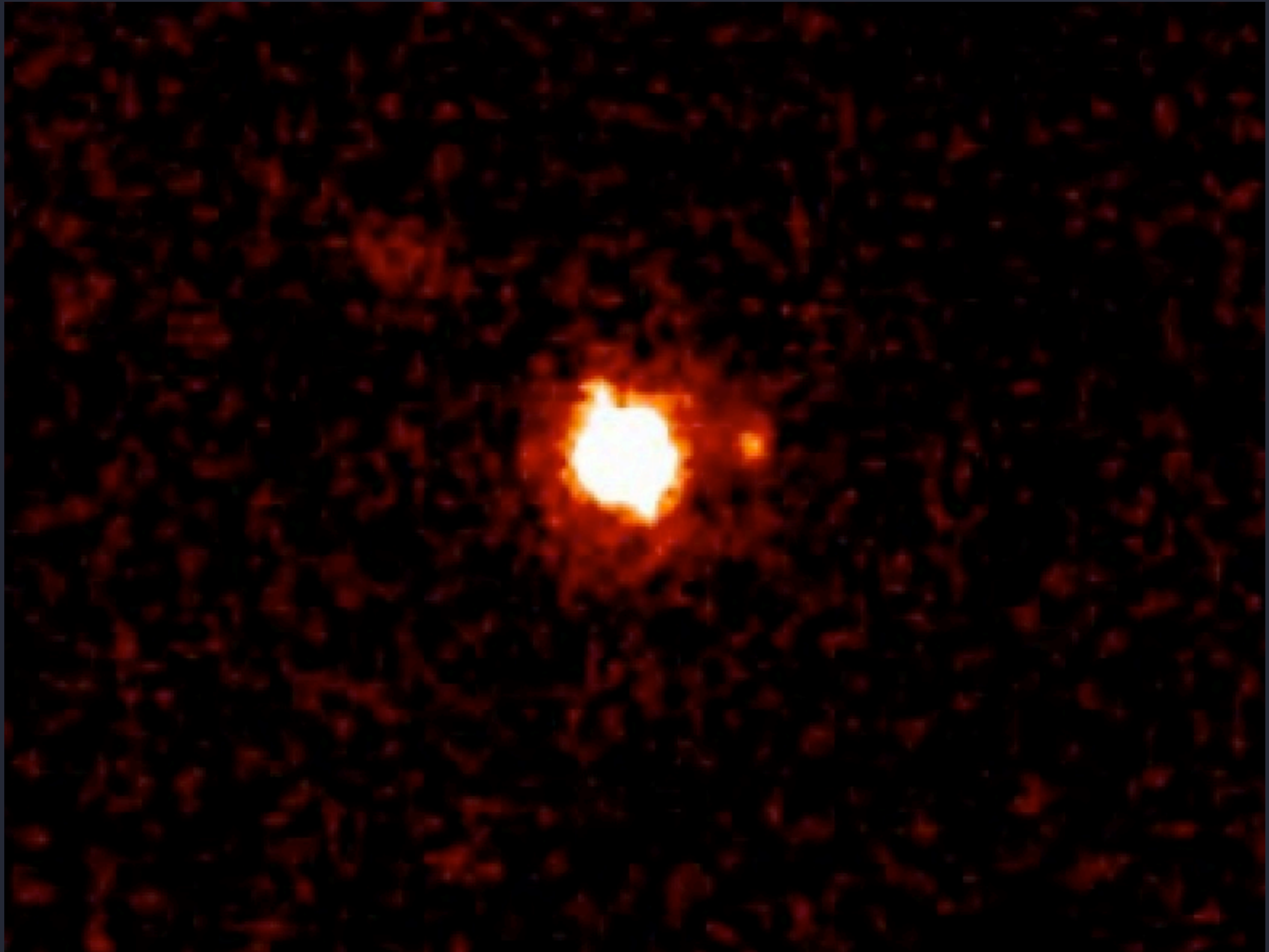


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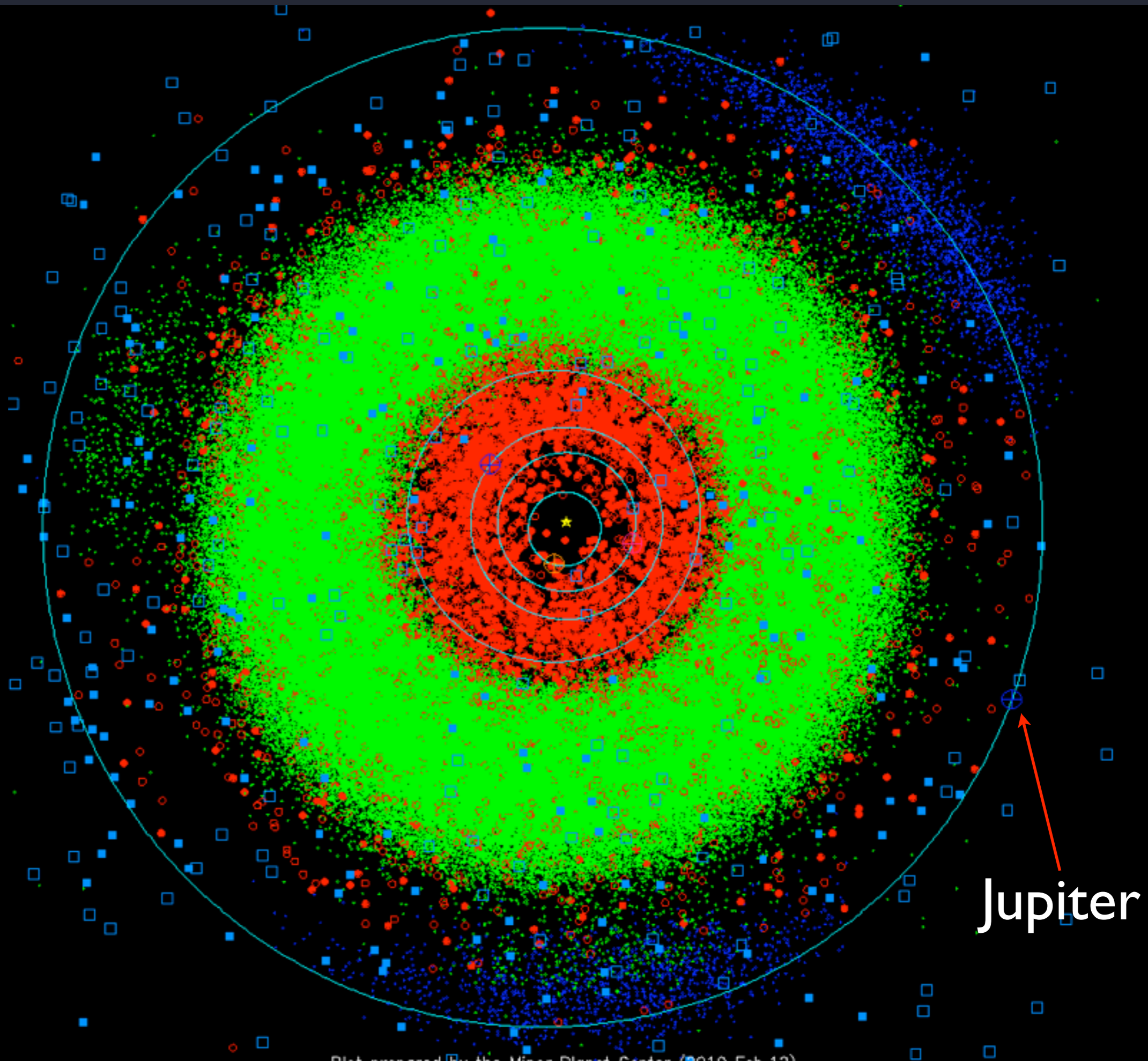
Pluto



Eris

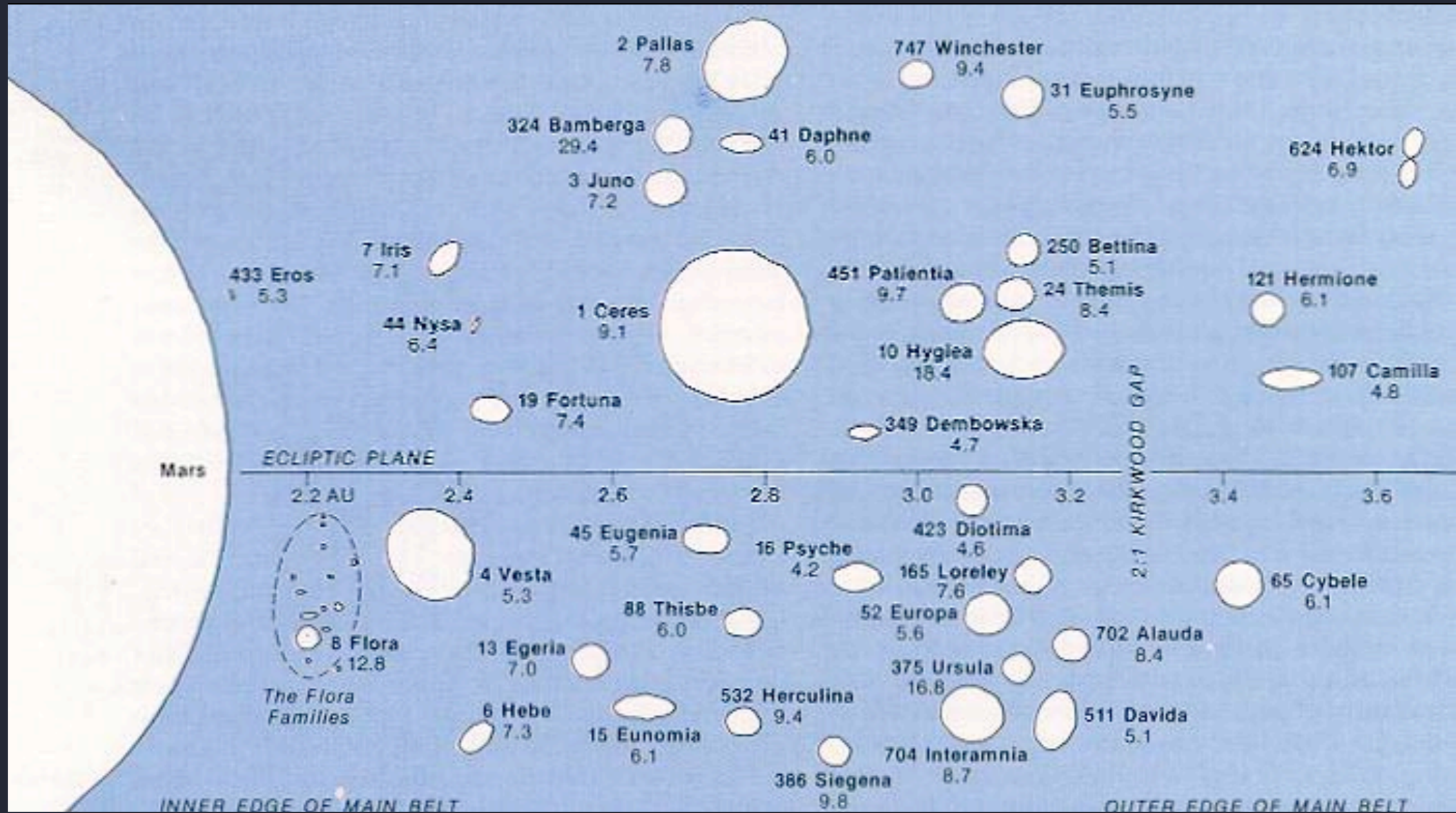


Positions
of the
known
asteroids



Jupiter

Relative asteroid sizes



Comet McNaught



Comet Temple



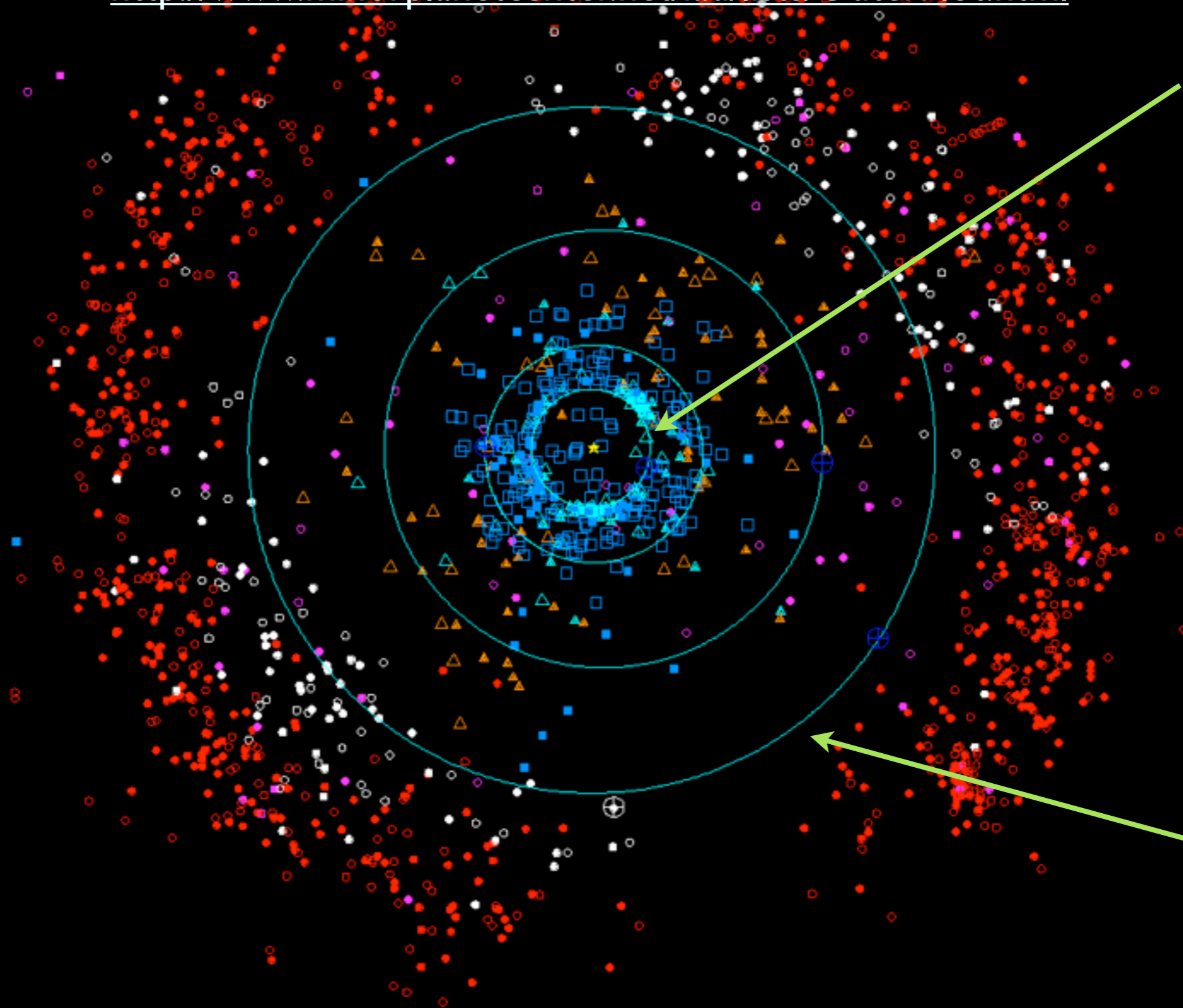
Comet Temple's nucleus



comets are “dirty snowballs”

Kuiper Belt Objects

check out the info, plots, and animations at
<http://www.minorplanetcenter.net/iau/lists/OuterPlot.html>



Jupiter's orbit

Neptune's orbit