

The Sun and its Planets

ASTR 201 - Spring 2015



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Textbook
The Cosmic Perspective
The Solar System
Seventh edition
Bennett, Donahue, Schneider, & Voit

Syllabus

- [Course Description](#)
- [Lecture Schedule](#)
- [Grades](#)
- [Assignemnts and Exams](#)
- [Homework](#)

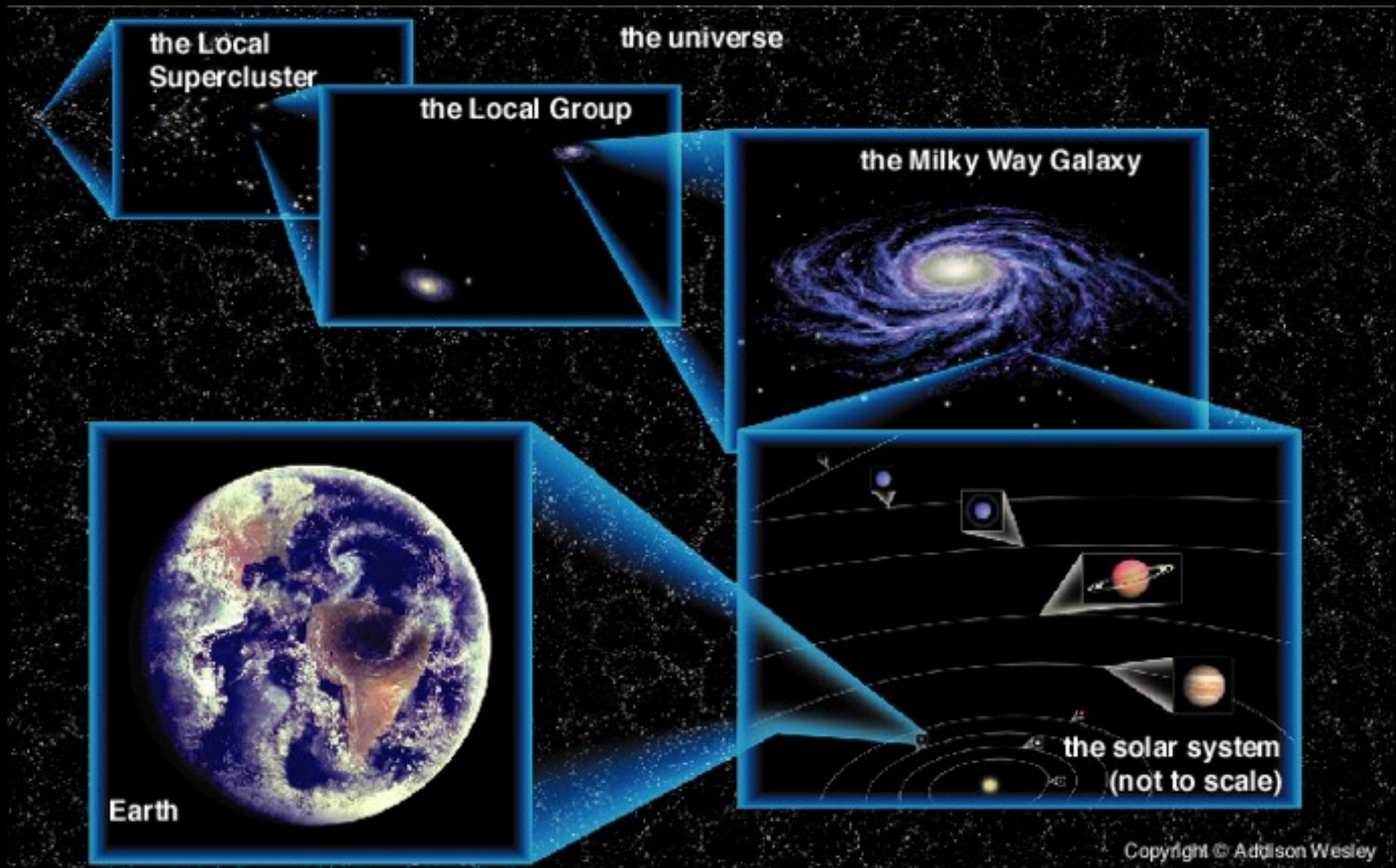
Course News

The first class is Tuesday, January 13

<http://astroweb.case.edu/ssm/astr201/>

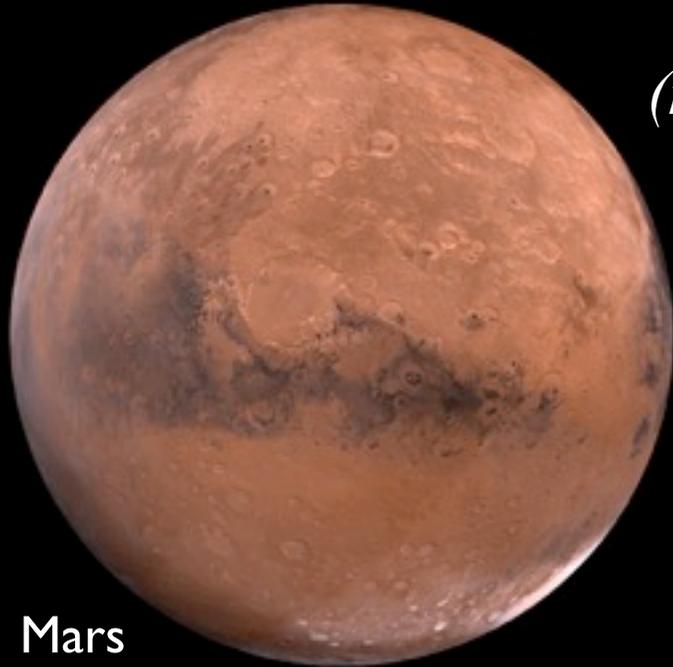
What is our place in the universe?

Our “Cosmic Address”



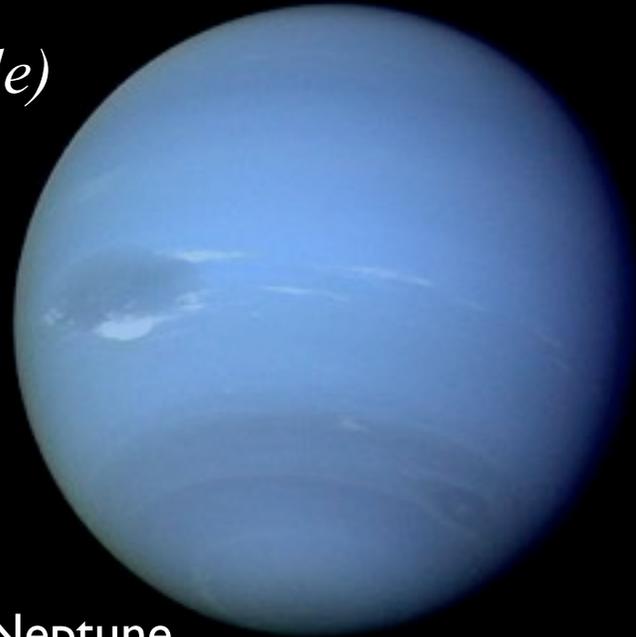


Planet



Mars

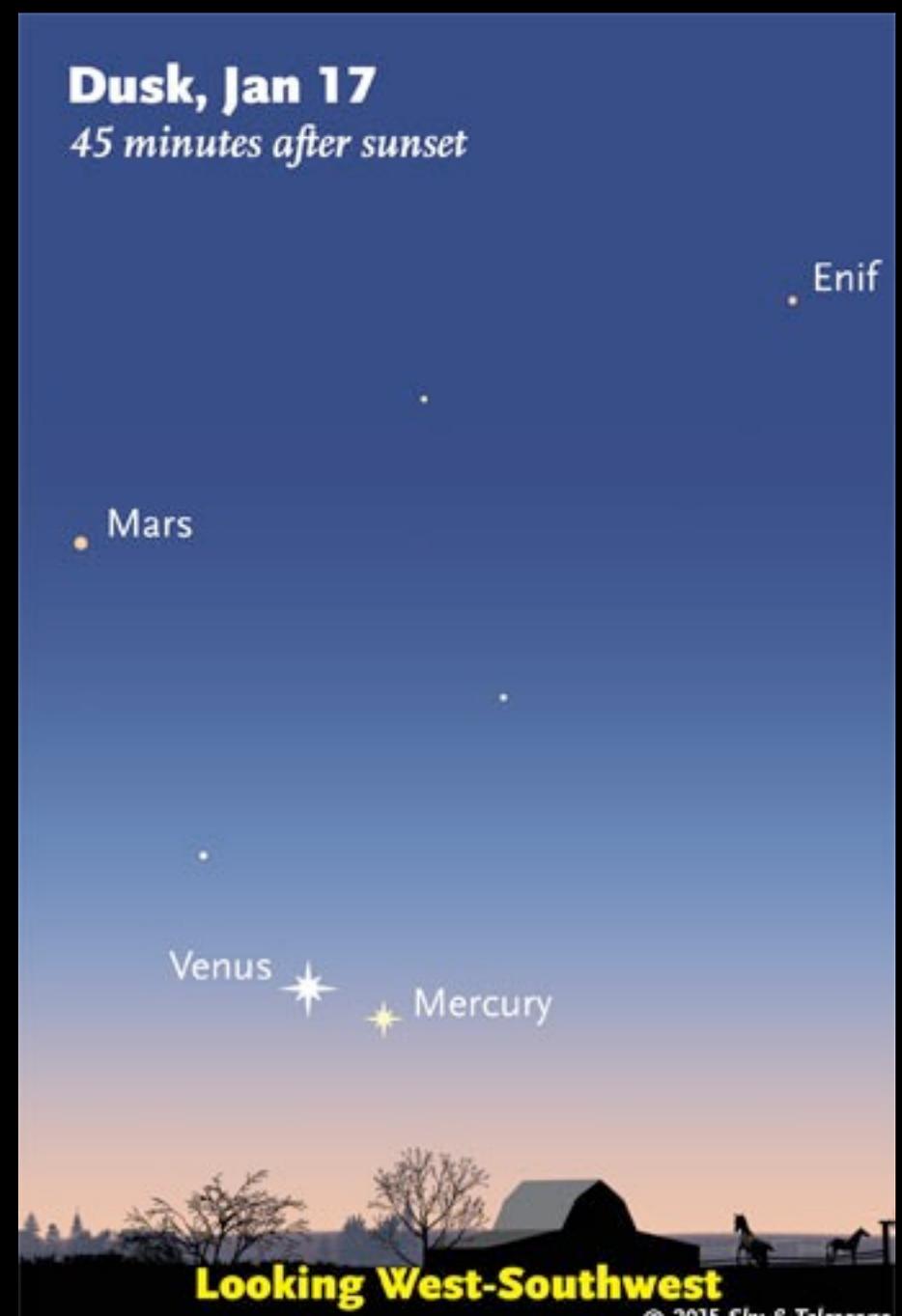
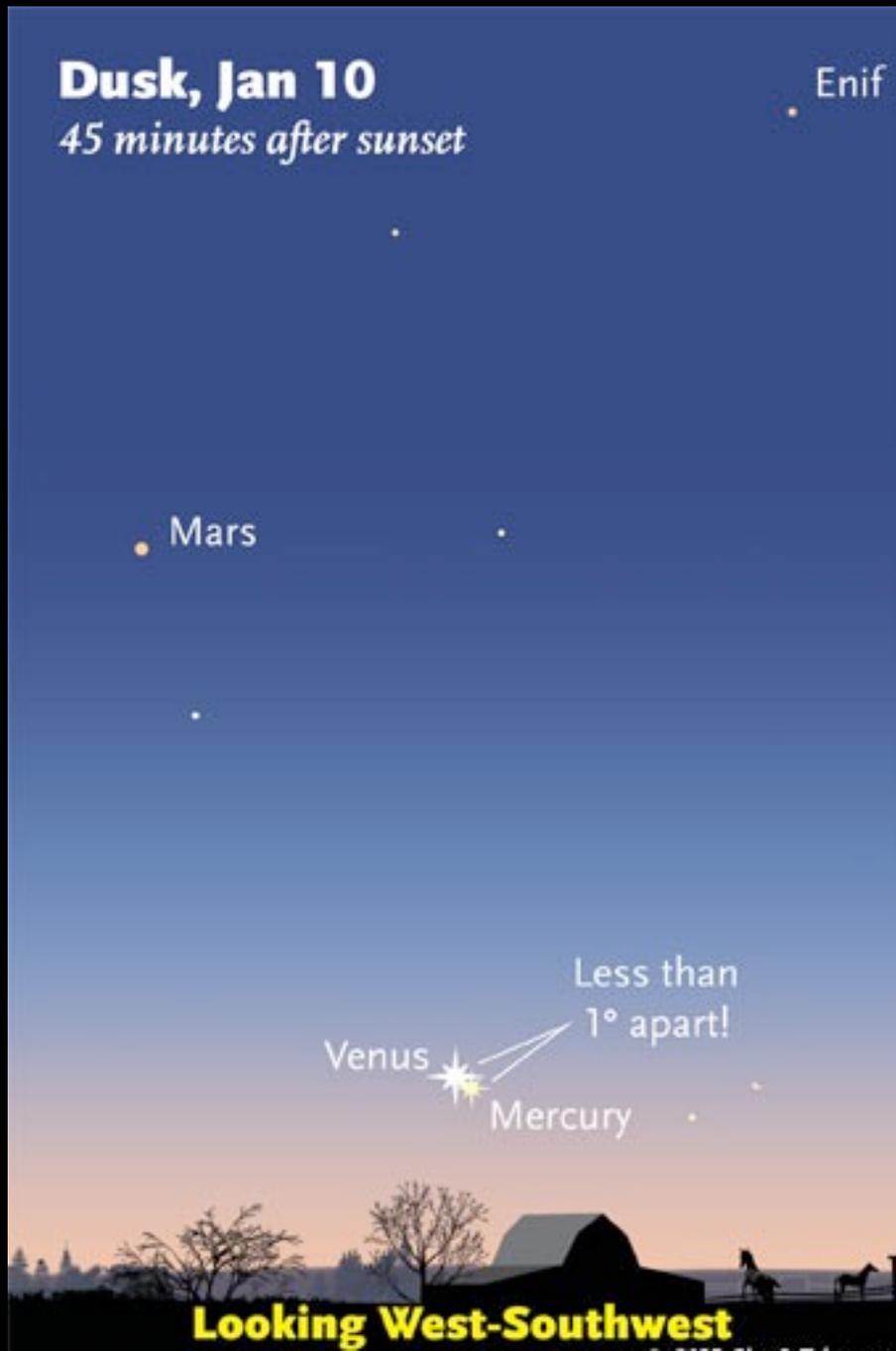
(not to scale)



Neptune

A moderately large object that orbits a star; it shines by reflected light. Planets may be rocky, icy, or gaseous in composition.

Sky to West-Southwest after sunset this week



Moon (or satellite)

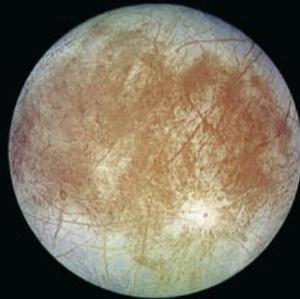
An object that orbits a planet.

Moons of Jupiter

1000 km



Io



Europa



Ganymede



Callisto

Selected Moons of the Solar System, with Earth for Scale

Earth

Mars

**Asteroid
Ida**

Jupiter

Saturn

Uranus

Neptune

Pluto

Eris



Moon

Phobos

Deimos

Dactyl



Io



Europa



Ganymede



Callisto

Mimas

Enceladus



Tethys



Dione



Rhea



Titan

Hyperion



Iapetus

Phoebe

Puck

Miranda



Ariel



Umbriel



Titania



Oberon

Proteus



Triton

Nereid



Charon

Dysnomia



Earth

Scale: 1 pixel = 25 km

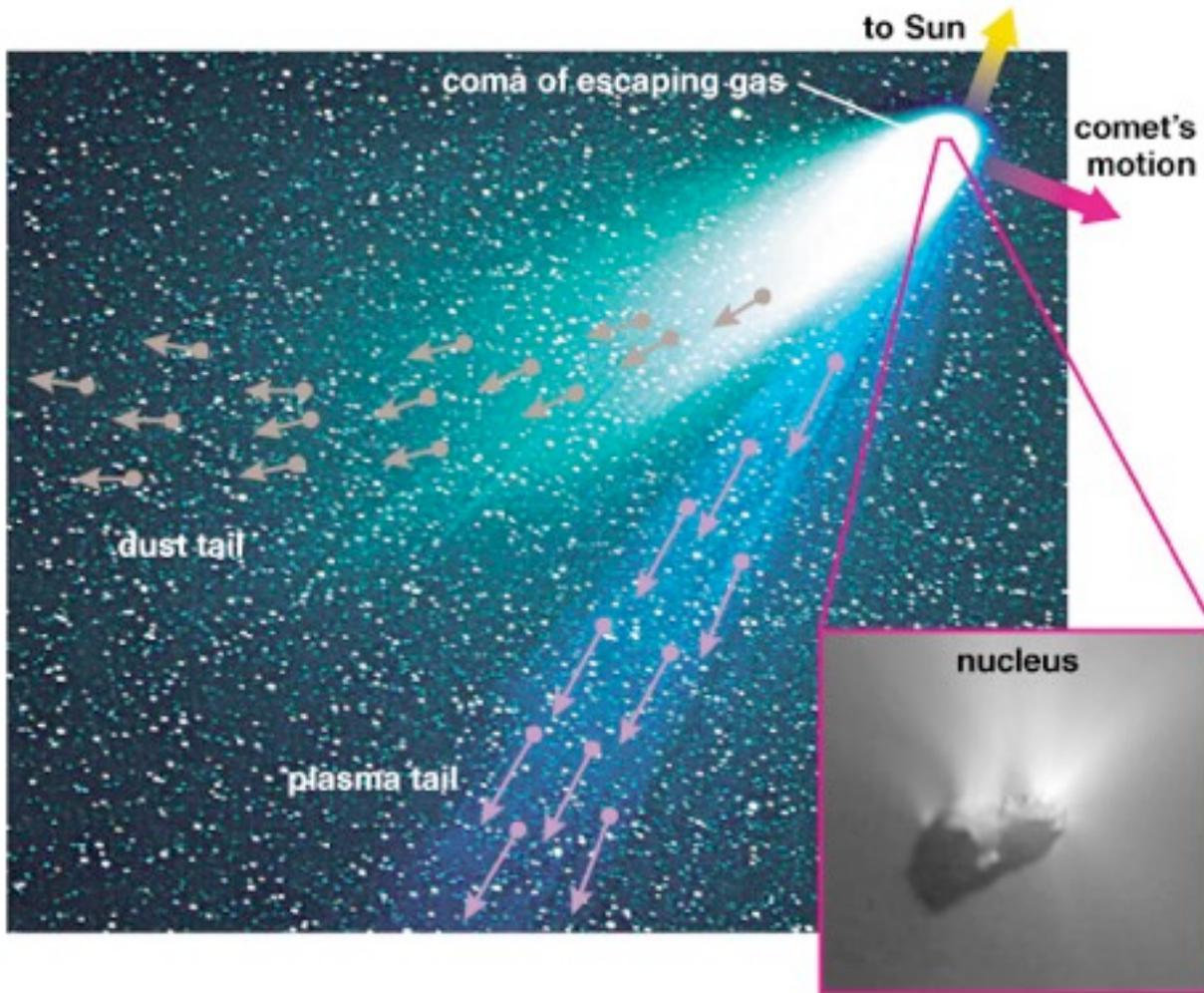
Asteroid

A relatively small
and rocky object
that orbits a star.

Ida



Comet

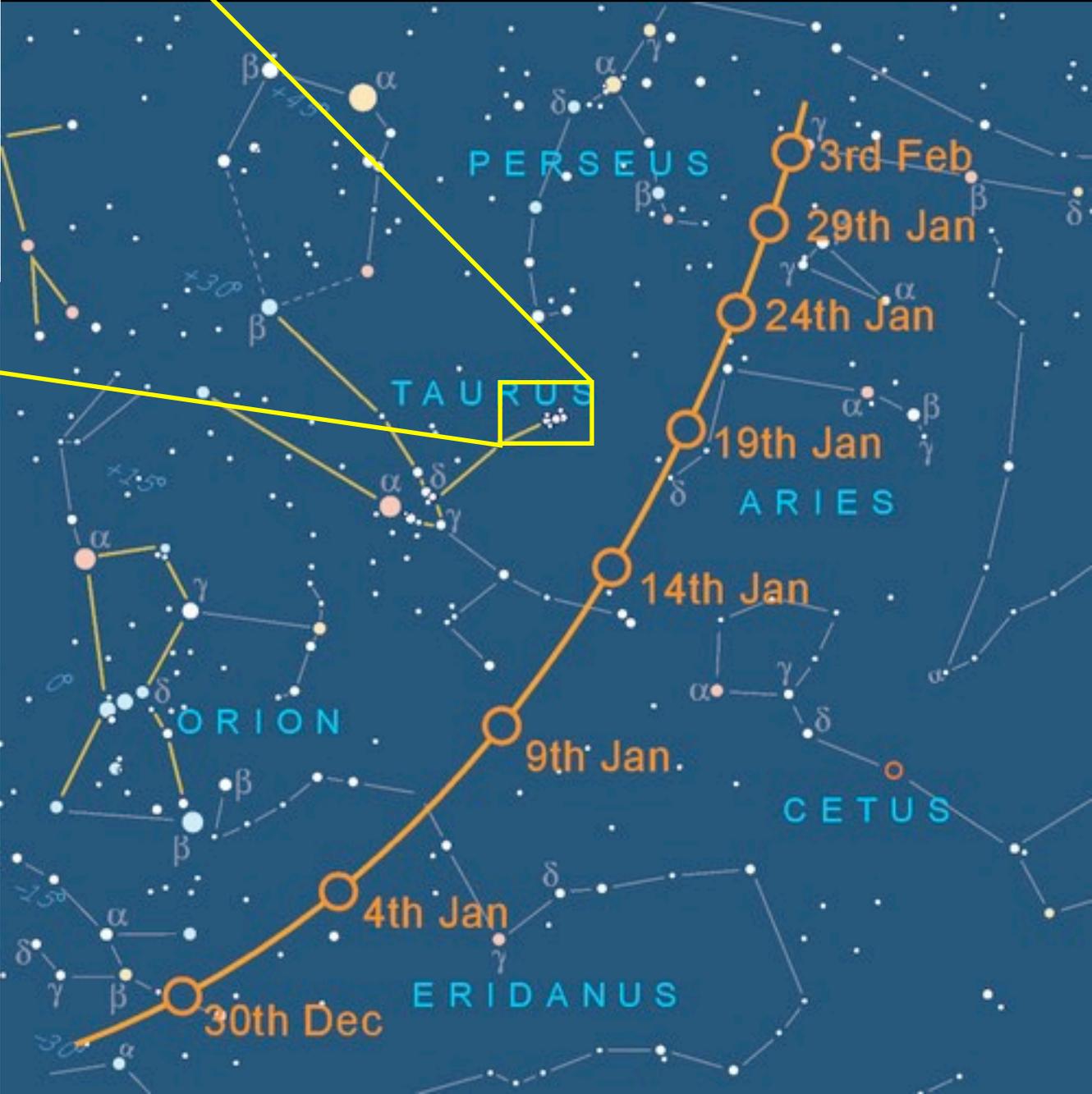


A relatively small and icy object that orbits a star.

Comet Lovejoy - currently visible

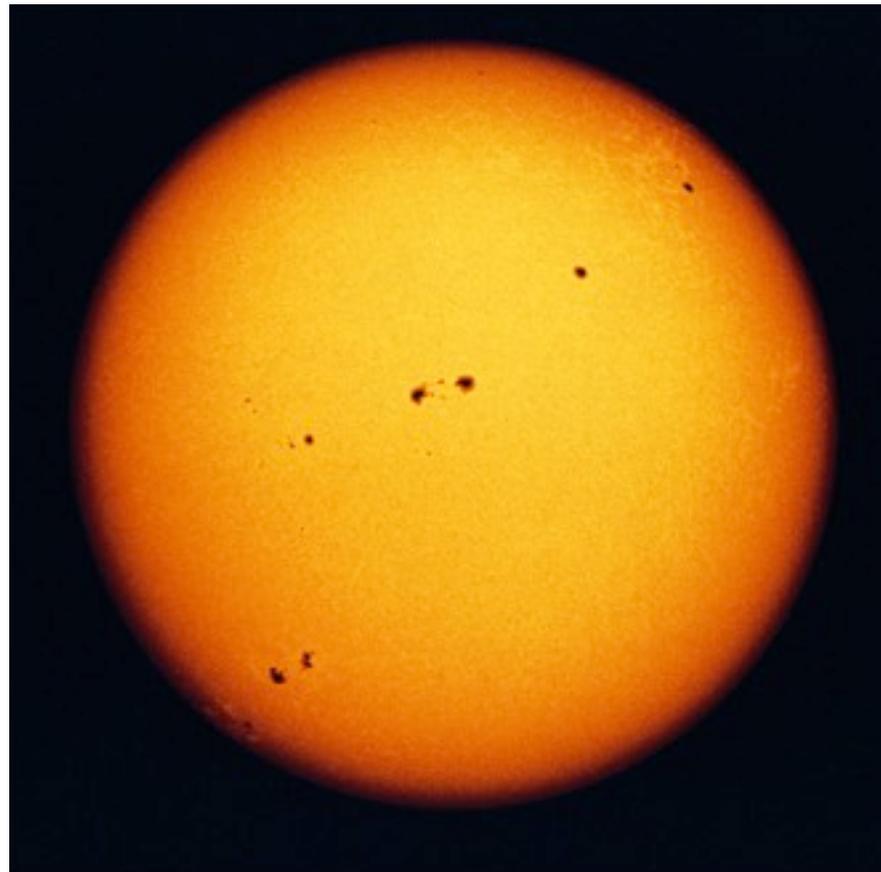


Comet Lovejoy - path



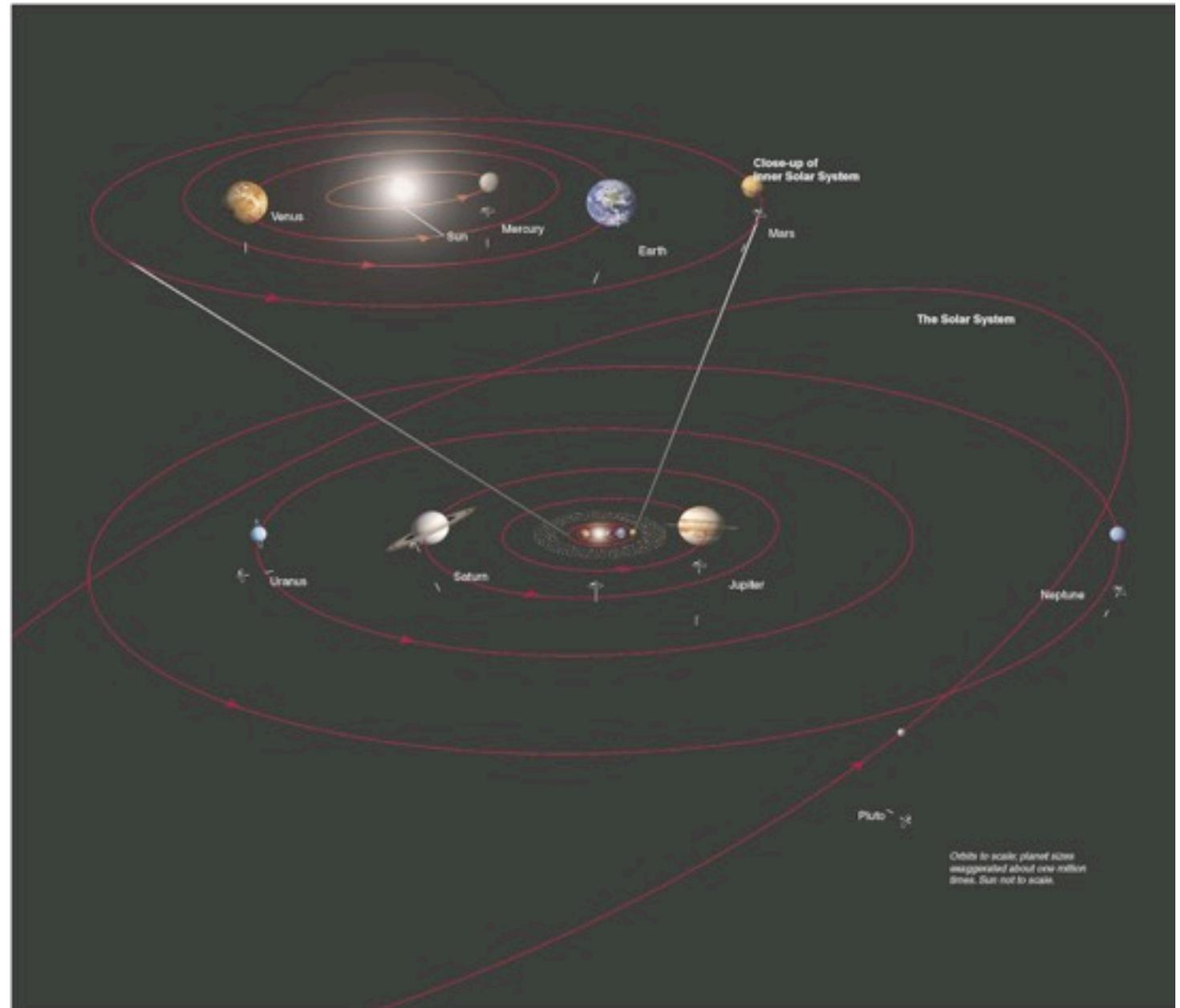
Star

A large, glowing ball of gas that generates heat and light through nuclear fusion



Solar (Star) System

A star and all the material that orbits it, including its planets and moons



Nebula

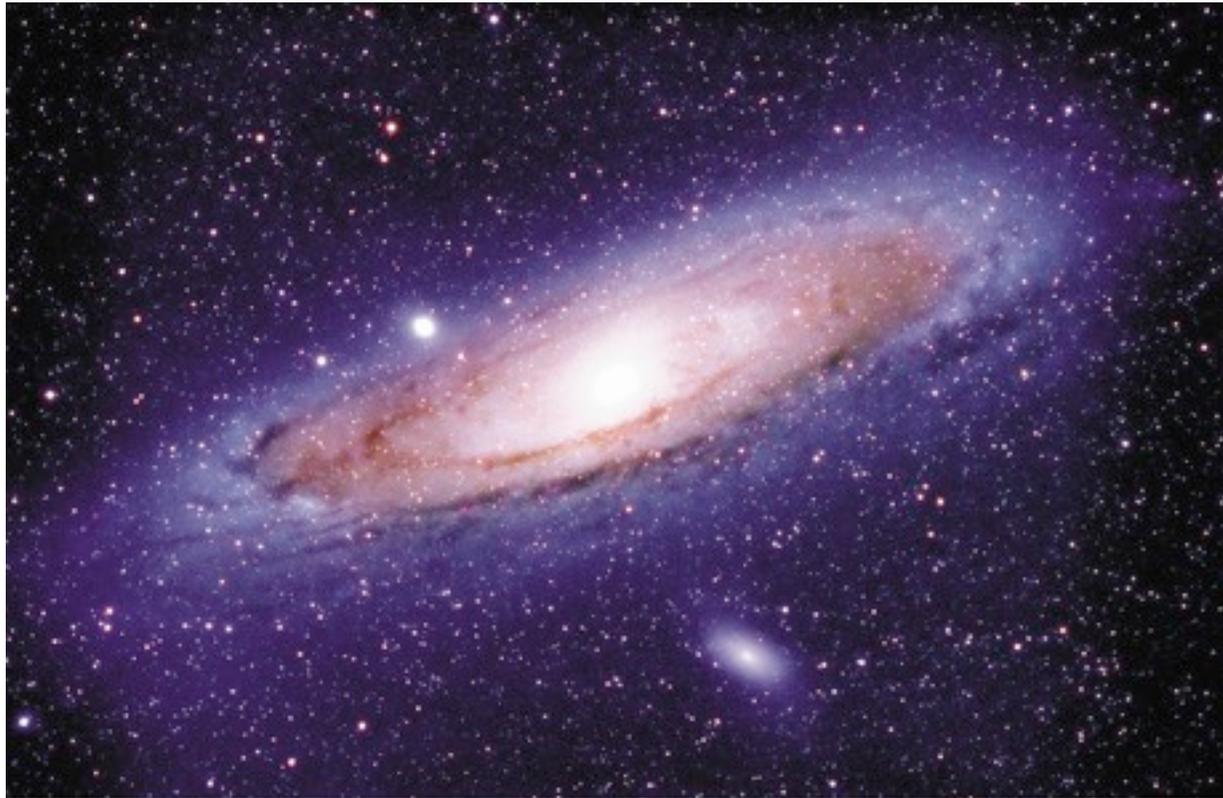


An interstellar cloud
of gas and/or dust

Typically larger than the solar system - may contain many stars

Galaxy

A great island of stars in space, all held together by gravity and orbiting a common center



100s of billions of stars

Universe

The sum total of all matter and energy;
that is, everything within and between
all galaxies

100s of billions of galaxies...
in the observable portion of the universe

