

Education is not the filling of a pail, but the  
lighting of a fire.

(William Butler Yeats)

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Stone Circles, Ireland. 6,000 year old Astronomical Calendars

# Newgrange, Ireland



Newgrange was constructed over 5,200 years ago, According to carbon-14 dates it was built about five hundred years before the Great Pyramid of Giza in Egypt and 1000 years before Stonehenge, England.





Newgrange is best known for the illumination of its passage and chamber by the winter solstice sun.

Above the entrance to the passage at Newgrange there is a opening called a roof-box.

Its purpose is to allow sunlight to penetrate the chamber on the shortest days of the year, December 21, the winter solstice



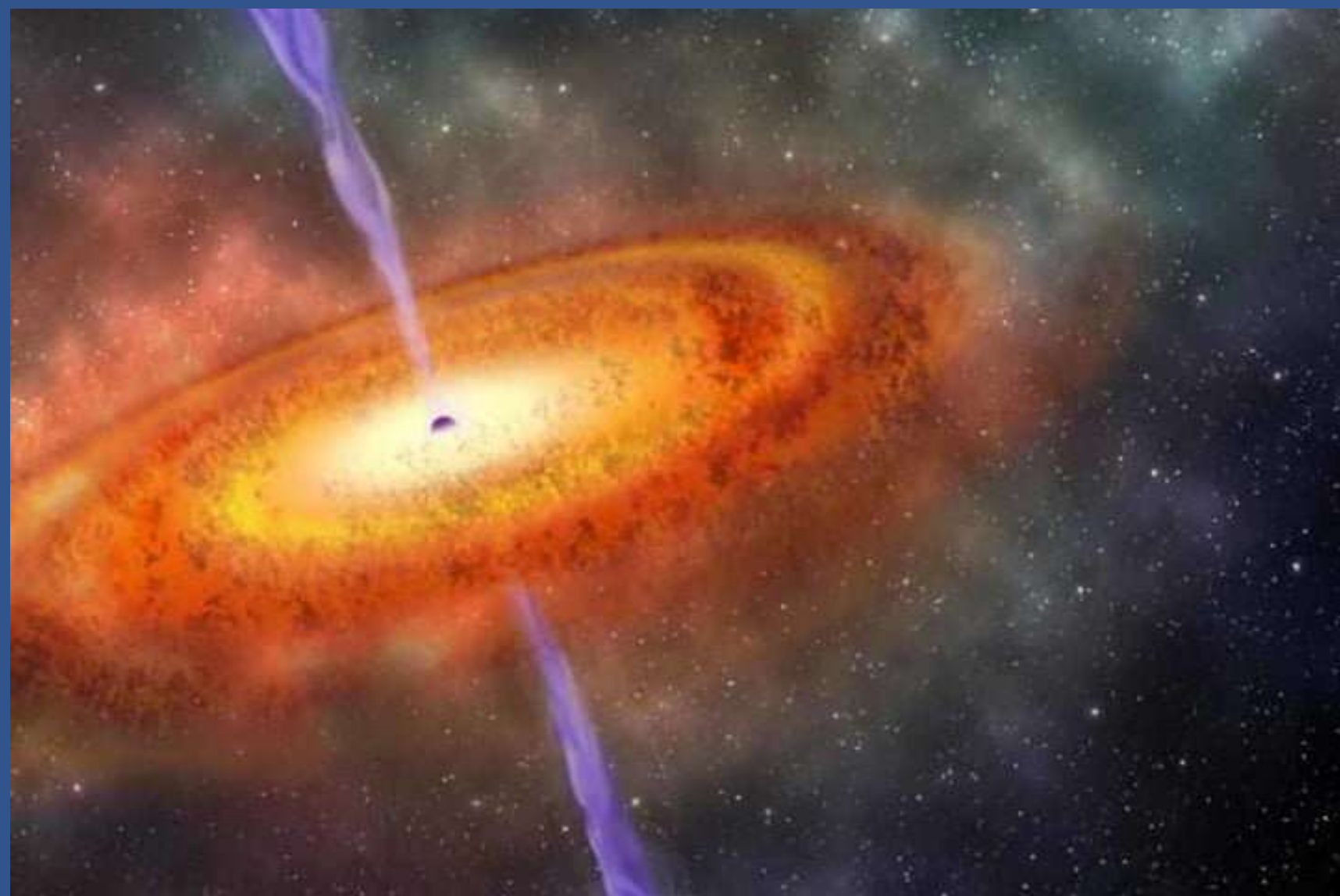
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Heritage & Local Government





Roque de Los Muchachos Observatory,  
La Palma, Canary Islands



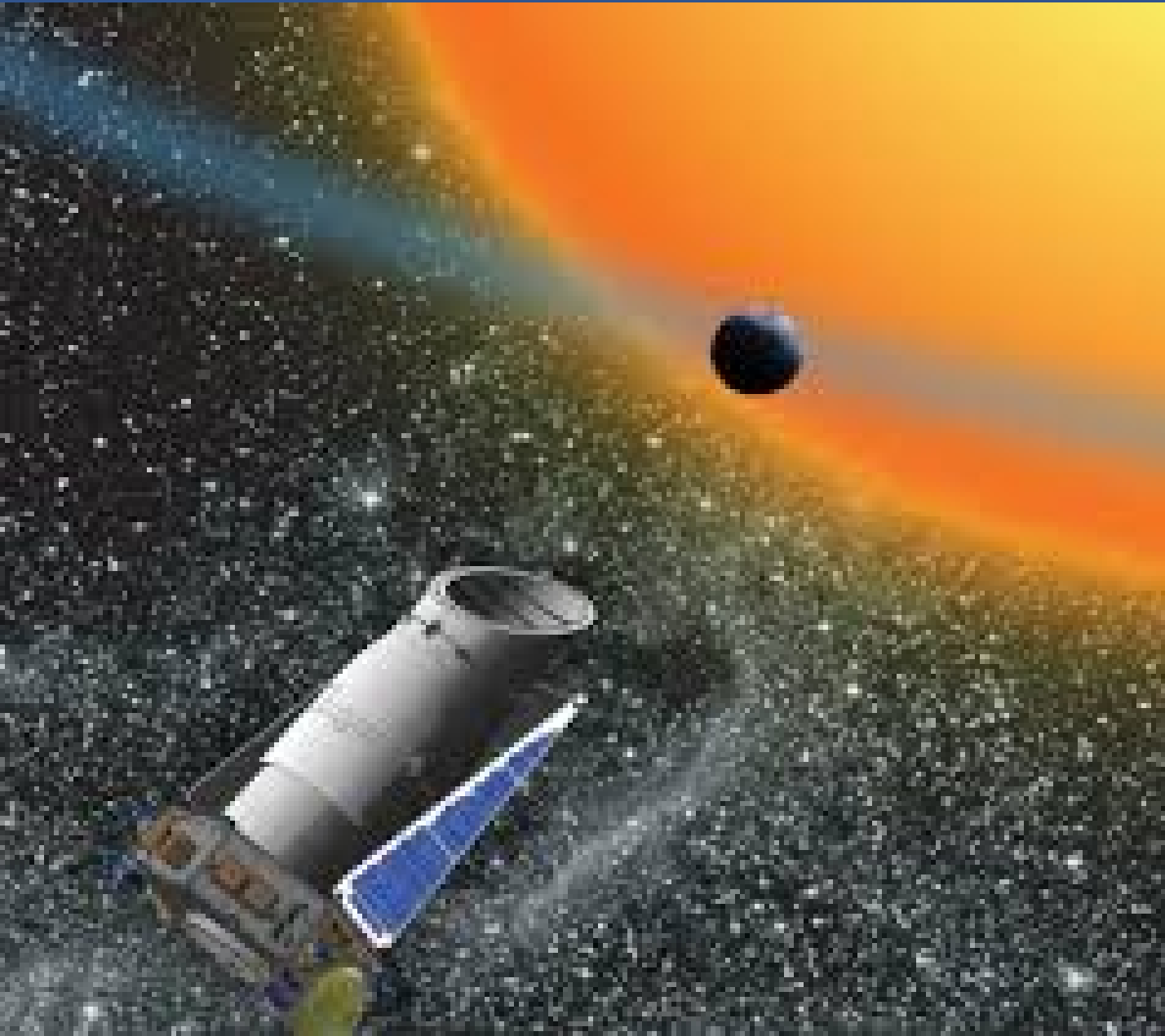


When a galaxy's central black hole pulls in material and glows, astronomers call it an *Active Galactic Nucleus*.

The black hole can weigh anywhere between a few million times our Sun's mass to tens of billions of times our Sun's mass.

A black hole's extreme mass means it has a huge gravitational force that pulls in all material nearby — gas clouds or stars — to form a disk of gas and dust around the black hole.

# NASA – Kepler Space Telescope

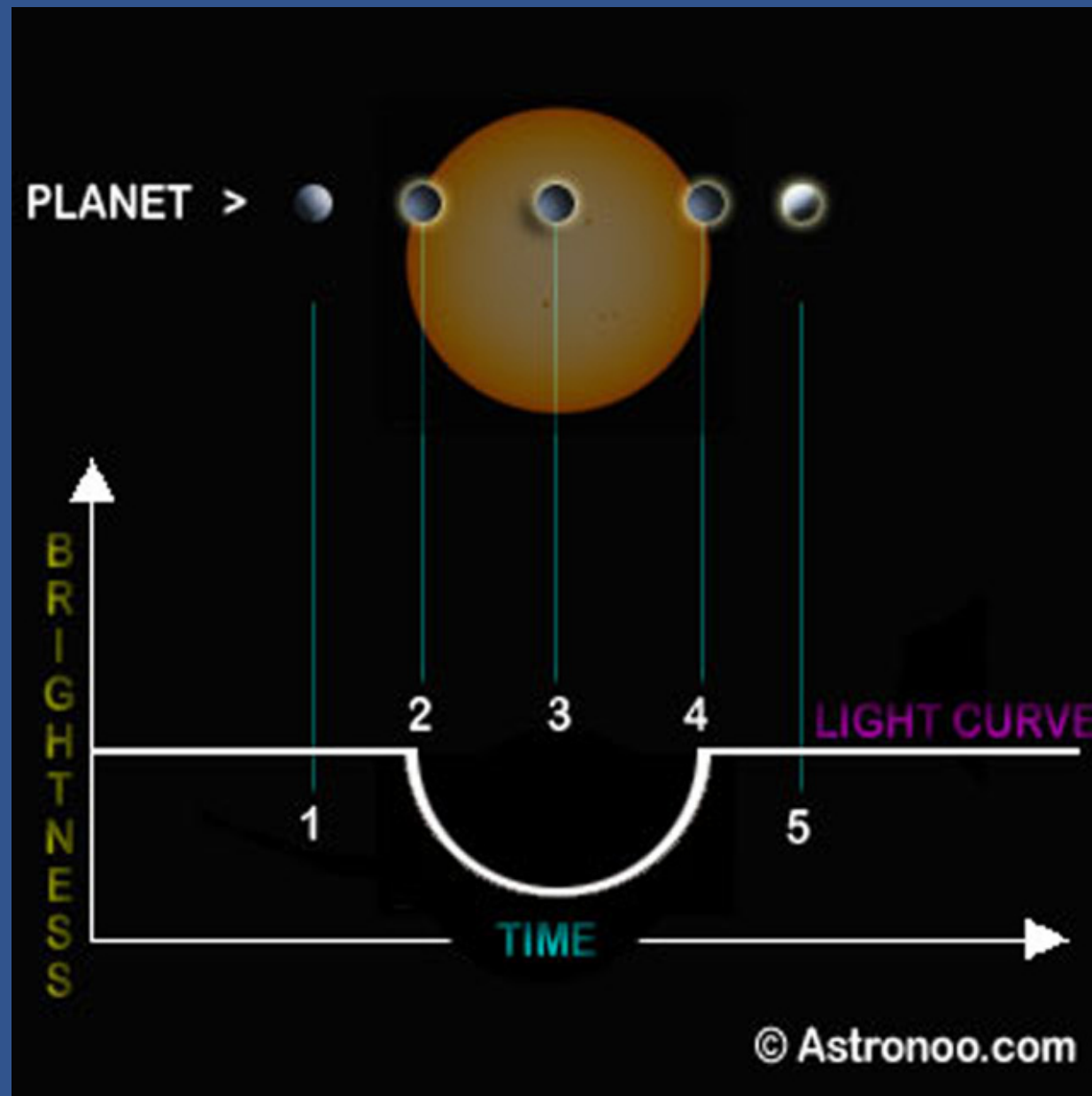


Kepler is a space observatory launched by NASA to:

1. Discover Earth-size planets orbiting other stars
2. Characterize their properties
3. Identify candidates that could harbor life



# Transit Technique



When a planet crosses in front of its star as viewed by an observer, the event is called a transit. Transits by terrestrial planets produce a small change in a star's brightness of about 1/10,000 (100 parts per million, ppm), lasting for 2 to 16 hours.

# Summary of Kepler's Amazing Results:

- 1 Planets are diverse
- 2 On average there is at least one planet for each star in our Galaxy
- 3 Planets about the size of the Earth are the most common
- 4 Planets about the size of the Earth that orbit in the Habitable Zone of their stars are common.

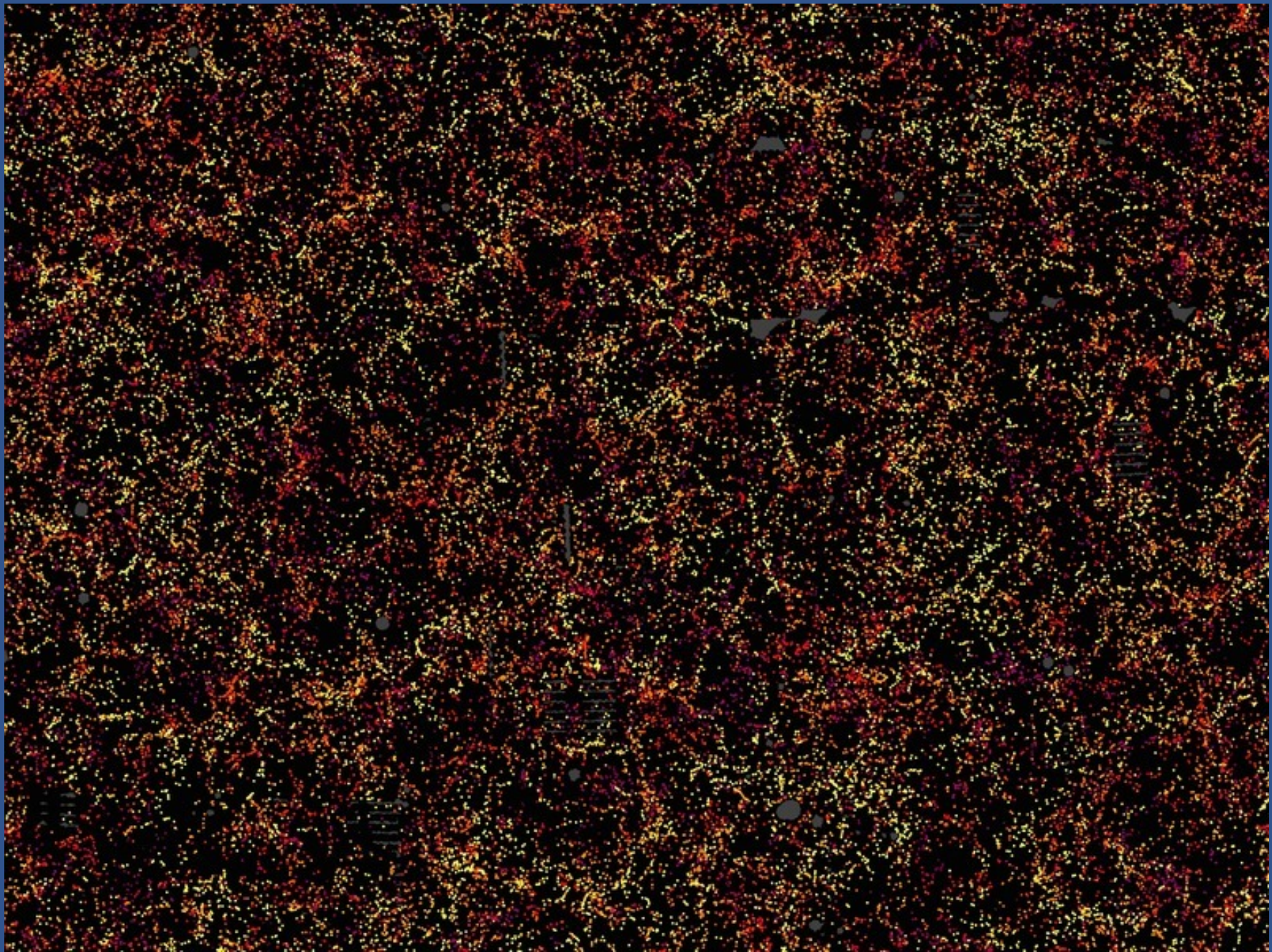


# Extrasolar Planets

- One Trillion Planets in our Galaxy





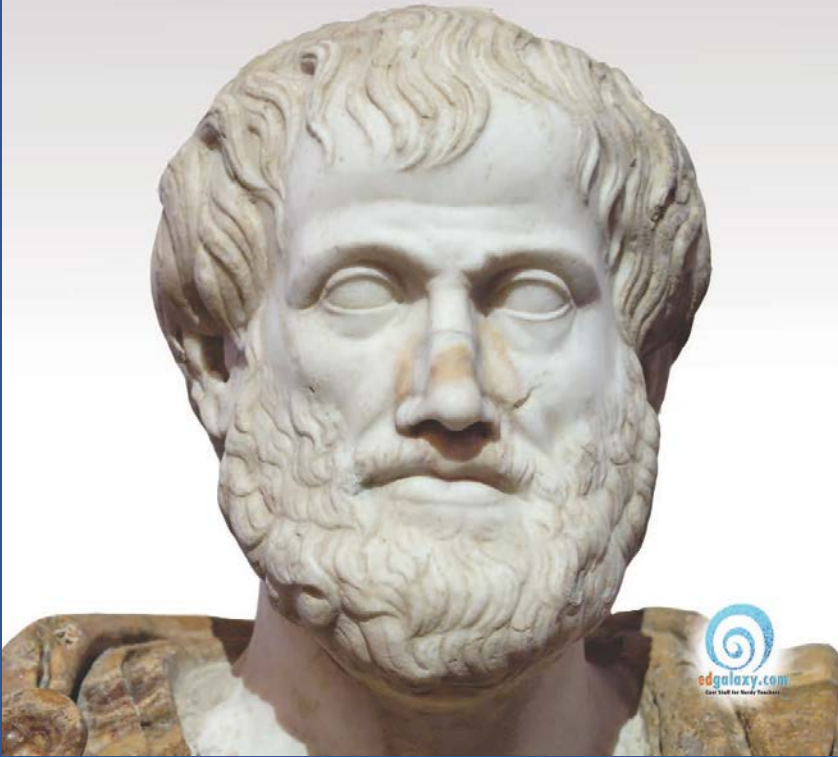


1.4 Million Galaxies in this image. Approximately 100 Billion Galaxies in our Universe.



“The roots of  
education are bitter,  
but the fruit is sweet.”

*-Aristotle*



# Solano Community College Astronomy

- General Astronomy
- Stars, Galaxies, and Cosmology
- Astrobiology
- Astronomy Laboratory
- Telescope making











# Neil deGrasse Tyson and the Hayden Planetarium

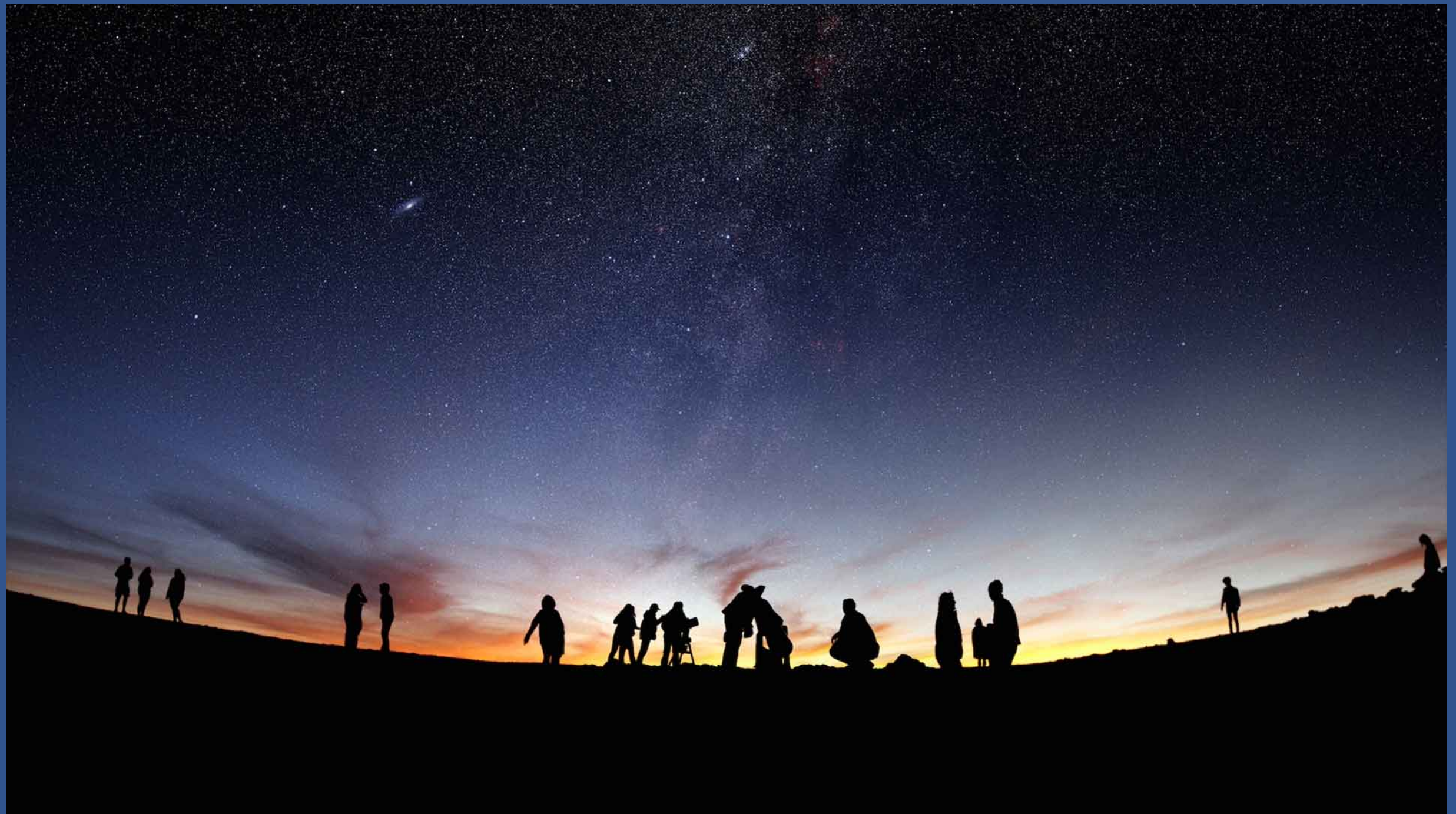




Modesto Community College  
planetarium and observatory











**Education is an admirable thing,  
but it is well  
to remember from time  
to time that nothing  
that is worth knowing  
can be taught**

— Oscar Wilde —

[www.StatusMind.com](http://www.StatusMind.com)

