Did you know?

The cores of active galaxies are now believed to contain very massive black holes. They probably range from a few thousand to a few billion times the mass of our Sun. These black holes grow by pulling in matter from the surrounding regions.

I have...

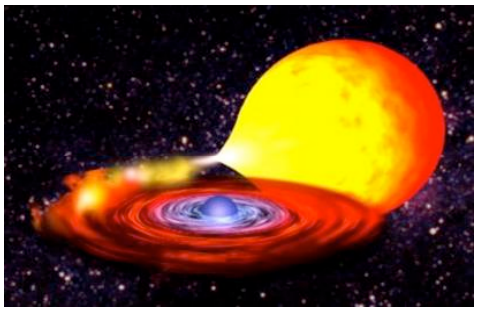
An artist's impression of an active galaxy.

Who has...

A image of a system of stars that can be so close that interactions produce X-rays.

Did you know?

Binary star systems contain two stars that orbit around their common center of mass. Many of the stars in our Galaxy are part of a binary system. When the binary is made up of a normal star and a collapsed star (a white dwarf, neutron star, or black hole) which are close enough together, material is pulled off the normal star by the gravity of the dense, collapsed star, and heated to the point that it produces X-rays.



I have...

An artist's impression of an X-ray binary star system.

Who has...

An image of a tool that scientists use to view cosmic objects above the Earth's atmosphere?

Did you know?

Black holes are objects so dense that not even light can escape their gravity, and since nothing can travel faster than light, nothing can escape from inside a black hole. On the other hand, a black hole exerts the same force on something far away from it as any other object of the same mass would. For example, if our Sun was magically crushed until it was about 1 mile in size, it would become a black hole, but the Earth would remain in its same orbit.

I have...

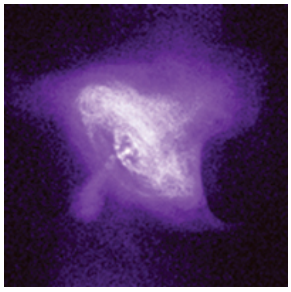
An artist's impression of a black hole.

Who has...

The image of an object that may contain a very massive black hole at its core?

Did you know?

Pulsars, it is believed, are spinning neutron stars that have jets of particles moving at the speed of light streaming out from their two magnetic poles. These jets produce very powerful beams of light. Just as "true north" and "magnetic north" are different on Earth, the magnetic and rotational axes of a pulsar are misaligned. Therefore, the beam of light from the jet sweeps around as the pulsar rotates, just like the spotlight in a lighthouse does. Like a ship in the ocean that sees only regular flashes of light, we see pulsars turn on and off as the beam sweeps over the Earth.



I have...

An X-ray image of a pulsar.

Who has...

The image of a source so dense that not even light can escape its gravity?

Did you know?

Observations of celestial X-ray sources must be carried out above most of the Earth's atmosphere, which absorbs this part of the electromagnetic spectrum. The numbers, sizes, and sophistication of X-ray detection systems have increased rapidly since their simple beginnings in the 1960s.

I have...

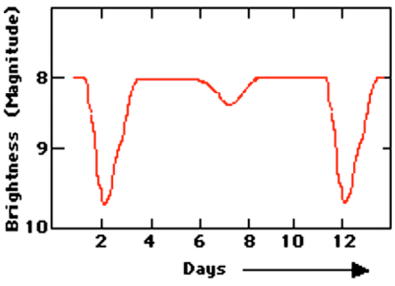
The RXTE X-ray Satellite.

Who has...

The X-ray image of the closest star to Earth?

Did you know?

A light curve is a graph which shows the brightness of an object over a period of time. In the study of objects which change their brightness over time such as novae, supernovae, and variable stars, the light curve is a simple but valuable tool to a scientist.



I have...

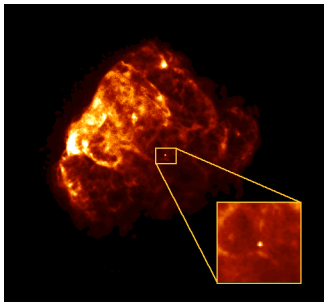
A sample of a plot called a light curve.

Who has...

The image of the object that produces periodic beams of light?

Did you know?

Neutron stars are fascinating objects because they are the most dense objects known. They are only about 10 miles in diameter, yet they are more massive than the Sun. One sugar cube of neutron star material weighs about 100 million tons, which is about as much as a mountain. Neutron stars are created in supernova explosions. This one can be seen surrounded by its supernova remnant.



I have...

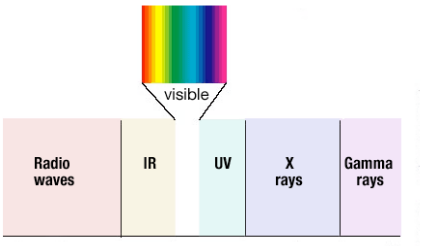
An image of a neutron star.

Who has...

A type of graph scientists use to show the brightness of an object over a period of time?

Did you know?

The electromagnetic (EM) spectrum is just a name that scientists give the collection of all radiation when they want to talk about them as a group. Visible light that comes from a lamp in your house or radio waves that come from a radio station are two types of electromagnetic radiation. Other examples of EM radiation are microwaves, infrared and ultraviolet light, X-rays and gamma-rays.



I have...

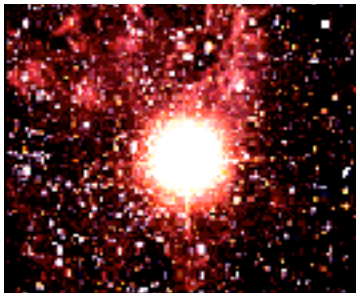
The electromagnetic spectrum.

Who has...

The image of the explosion that occurs when a massive star nears the end of its life?

Did you know?

Stars which are 5 times or more massive than our Sun end the fusion-burning stage of their lives in a most spectacular way; they go supernova. A supernova explosion will occur when there is no longer the proper fuel for the fusion process in the core of the star to create an outward pressure that combats the inward gravitational pull of the star's great mass.



I have...

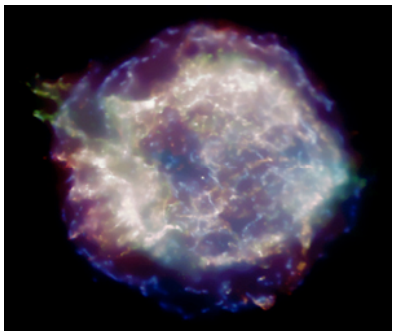
An image of a supernova explosion.

Who has...

The image and plot of an extremely powerful and very high-energy event?

Did you know?

Supernova remnants greatly impact the ecology of the Milky Way. If it were not for SNRs there world be no Sun or Earth. Every element found in nature, except for hydrogen and helium, was made in either a star or a supernova explosion. After a supernova explosion, the outer layers of the star expand into space, enriching the material which form future generations of stars.



I have...

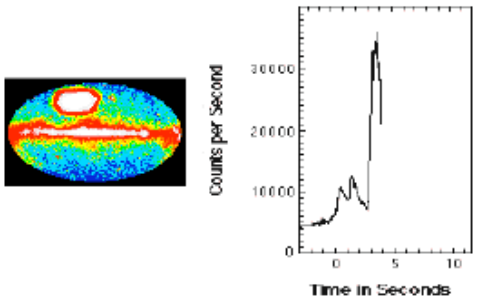
An X-ray image of a supernova remnant.

Who has...

A concept that scientists use when discussing various wavelengths or frequencies of light?

Did you know?

Gamma-ray bursts pose one of the greatest mysteries of modern astronomy. About once a day, the sky lights up with a spectacular flash, or burst, of gamma-rays. More often than not, this burst outshines all of the other sources of cosmic gamma-rays added together. The source of the burst then disappears altogether. No one can predict when the next burst will occur or from what direction in the sky it will come.



I have...

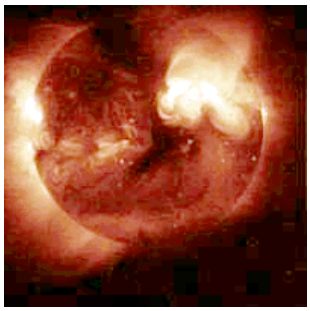
An image and a plot of a gamma-ray burst, as measured by a scientist.

Who has...

The image of a star in the later part of its life, which is more massive than the Sun, but only 10 miles across?

Did you know?

The X-rays we detect from the Sun actually come from the solar corona, not the solar surface. The corona, the upper layer of the Sun's atmosphere, is very, very hot (over a million degrees!). Thus, it is an excellent source of X-rays.



I have...

The X-ray Image of our star, the Sun.

Who has...

The image of the outer layers of a massive star, which are expanding into space after an incredibly explosive stellar death cry?