Title:
Could A Liquid Mirror Telescope Be A Splash Hit!

Word Count:
544

Summary:
A telescope is a viewing instrument that utilizes the refraction or reflecting of light rays and allows for images to be brought closer. This capturing of light is accomplished through a component that is called the objective.

The objective is that part of the telescope which, through the captured light, provides an image of the object that is being viewed. Typically, the objective is either composed of a set of lenses or a concave mirror.

Now, think about the possibili...

Keywords:
child telescope,brass telescope,mirror telescope,astronomical telescope,digital telescope,

Article Body:
A telescope is a viewing instrument that utilizes the refraction or reflecting of light rays and allows for images to be brought closer. This capturing of light is accomplished through a component that is called the objective.

The objective is that part of the telescope which, through the captured light, provides an image of the object that is being viewed. Typically, the objective is either composed of a set of lenses or a concave mirror.

Now, think about the possibilities of utilizing liquid to mirror reflections back to our vision. The concept of a liquid mirror would be similar to the experience of looking at your image in a pool of water. However, a liquid mirror telescope would be used to peer into the depths of space. At first glance the concept of a liquid mirror telescope seems like something that is a far-fetched and very futuristic.

However, the future is now as astronomers realize the potential of employing a liquid mirror telescope to take the place of a concave mirror that is typically found in a reflecting telescope.

History Of A Liquid Mirror Telescope

Isaac Newton in the 17th century was the first individual to go on record about the possibilities of a liquid mirror telescope. In his studies, he realized that when liquid is spun it forms a natural concave bowl-like shape. This spinning liquid would provide the same shape of the concave mirrors that are used in a reflective telescope.

Unfortunately, his idea was ahead of its time. The reason being is that the electric motor had not been invented. The electric motor would have been needed to provide the rotation required to give the liquid its concave form.

The first documented case of a liquid mirror telescope being used was in 1909. However, it wasn't until 1982 that a physicist by the name of Ermanno Borra modified the design to improve the performance of the liquid mirror telescope. One such telescope is located in British Columbia, Canada.

Structure Of A Liquid Mirror Telescope

Fortunately, today, all of the needed technology is available and has, in fact, brought the practical use of a liquid mirror telescope in to practice. Specifically, the liquid that is used is 30 liters of mercury. This mercury is poured into a concave dish that is built in segments. The dish itself is manufactured from a durable plastic coupled with polyester. The frame that holds the dish is a light metal.
The Process

In order to form the shape required to optimally provide the reflection needed, the dish begins to spin. The spinning speed is about 7 revolutions per minute. This speed is maintained so that the proper distribution of the mercury occurs.

Advantages And Disadvantages

The only disadvantage that has been demonstrated in the use of a liquid mirror telescope is the need for the dish to remain parallel. This is obviously due to the fact that if tilted the liquid would flow gravitationally to the end that is tilted downwards.

The advantage is that the area of reflection is extremely large. This larger area provides a greater capacity to capture more light which adds to the visibility of the object being viewed. In turn, this larger area of reflection allows for greater distances in the galaxy to be observed.