

Observing With the Rapid Response Robotic Telescope

Ethan Steere

Betelgeuse

Type - Red Supergiant

Catalog Number - HD 39801

Distance - 500-600 Light Years

Date of Observation - 2023-02-27

Time of Observation - 01:20:30

Exposure ID - 37007895

Filter - Red

Exposure Length - .25 seconds

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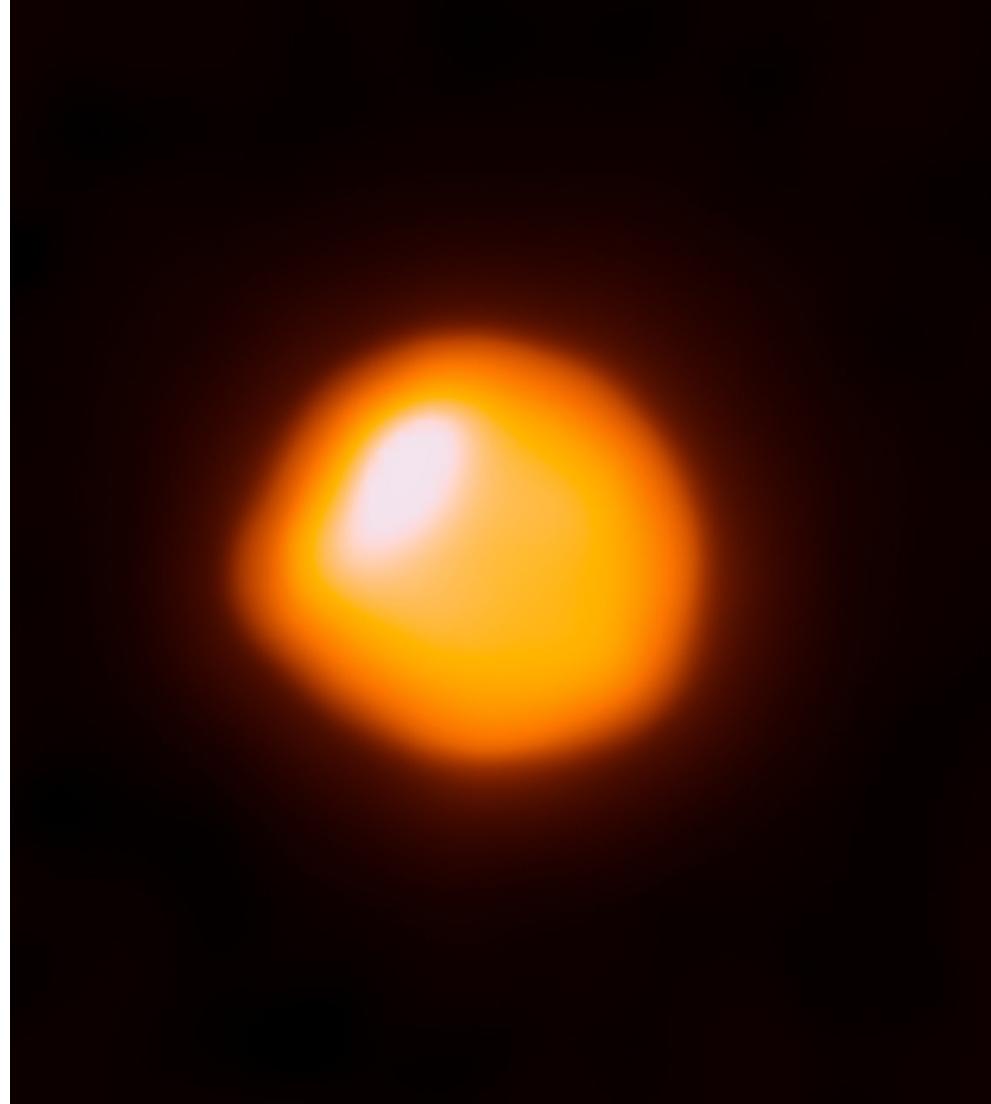


Image Description

The star is pictured brightly against a dark background. The red filter emphasizes the contrast between the star's bright core and its fainter outer layer, creating a dramatic and striking image. Although not obvious from the image, Betelgeuse is an immense and powerful Supergiant!

Significance

Betelgeuse is one of the brightest stars in the night sky and is easily visible to the naked eye. Betelgeuse is of great astronomical significance because it is one of the closest supernova candidates to Earth, and its eventual explosion could be visible even during the daytime.



Whirpool Galaxy

Type - Spiral Galaxy

Catalog Number - M51

Distance - 31 Million Light Years

Date of Observation - 2023-02-27

Time of Observation - 05:54:56

Exposure ID - 37007902

Filter - GPrime

Exposure Length - 120 seconds

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Image Description

The image shows well-defined arms and a bright central region, with high contrast emphasizing the dust lanes and star-forming regions. In the lower left corner, a small paired galaxy known as NGC 5195 is visible. The photograph provides a captivating glimpse of M51 and its companion galaxy's fascinating details.

Significance

M51 is a nearby and well-known spiral galaxy that is studied extensively by astronomers. It's valuable for understanding galaxy interactions and mergers, as well as the impact of supermassive black holes on the surrounding environment, due to its interacting nature with NGC 5195 and prolific radio and X-ray emissions.



Ring Nebula

Type - Planetary Nebula

Catalog Number - M57

Distance - 2283 Light Years

Date of Observation - 2023-03-16

Time of Observation - 09:40:29

Exposure ID - 37007907

Filter - GPrime

Exposure Length - 120 seconds

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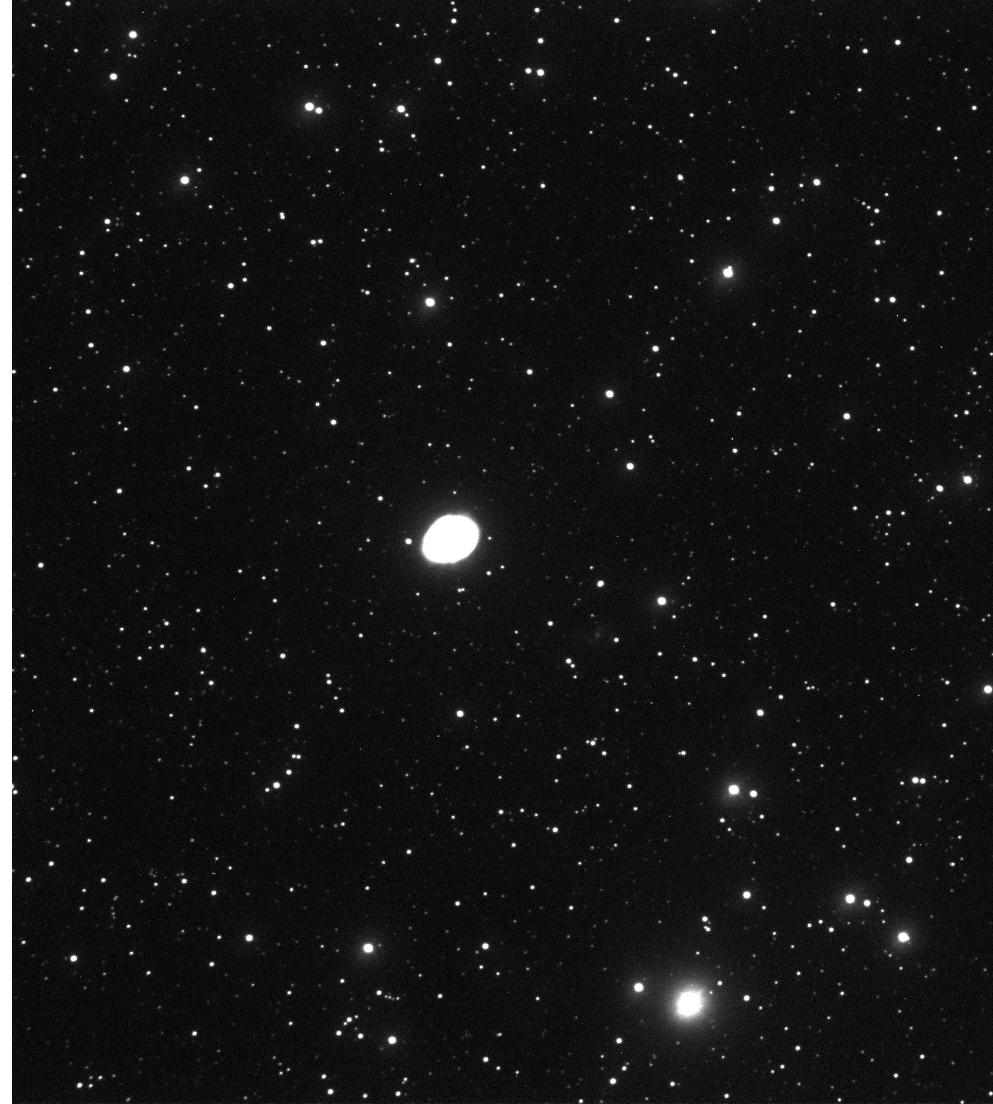


Image Description

This image depicts Messier 57, a planetary nebula in the constellation Lyra. The nebula's round shape and faint outer regions are visible in the image, giving a sense of the object's size and structure. Although not highly detailed, this image provides a glimpse into the beautiful and complex nature of planetary nebulae.

Significance

The Ring Nebula, also known as Messier 57, was formed from the ejected outer layers of a dying star, providing astronomers with valuable insights into the late stages of stellar evolution. The Ring Nebula is also a popular target for astronomers to study the properties of ionized gas and dust in space.



Messier 78

Type - Diffuse Reflection Nebula

Catalog Number - M57

Distance - 1600 Light Years

Date of Observation - 2023-03-07

Time of Observation - 01:00:28

Exposure ID - 37007912

Filter - GPrime

Exposure Length - 120 seconds

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Image Description

This fascinating image captures Messier 78, a reflection nebula in the constellation Orion. The image offers a glimpse of the nebula's enigmatic shape and position in the night sky, showcasing the beauty and wonder of the cosmos.

Significance

It is studied for its role in ongoing star formation, as it contains young, hot stars that are illuminating the surrounding gas and dust. The nebula's intricate structures and processes provide valuable insights into the formation and evolution of stars and planetary systems.

