

# A 360-degree view of the Milky Way opens doors for scientific study

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The Milky Way arches over Monument Valley near the Arizona-Utah state line.

MILWAUKEE—A team of Wisconsin scientists has come up with something very exciting: a 360-degree view of the Milky Way. The new view shows our galaxy from every direction.

Galaxies are large groups of stars held together by gravity. They don't only contain stars, though. There are also the planets, gasses and space dust found between the stars. Earth is located in the Milky Way, which is only one of many galaxies. All of the galaxies make up our universe.

The new picture of the Milky Way is known as GLIMPSE360. It was presented on Thursday.

GLIMPSE360 is made up of about 2.5 million pictures. These were taken by NASA's Spitzer Space Telescope. Spitzer has been mapping the galaxy for more than 10 years. It is actually in outer space, in orbit.

## An Infrared View

Spitzer is an infrared telescope. That is, it shows things as they look in infrared light. This allows scientists to see much that isn't visible in ordinary light. Infrared telescopes can cut through clouds

of space dust. Ordinary telescopes can't see through such dust.

Scientists have learned a great deal from Spitzer's pictures. They have been able to study much that was previously hidden in the Milky Way. More than 200 million new stars have been discovered.

Thanks to GLIMPSE360, scientists can now easily examine the overall shape of the Milky Way. It has parts that stick out, like arms. Scientists can now see how many "arms" it has. And they also can see just where those arms are, and how long they are.

Viewers can see more than the shape of the whole galaxy. They also can zoom in on particular objects.

## **Star Births And More**

GLIMPSE360 has already shown how useful it can be. It has proven something scientists had suspected: A large bar runs straight through the center of the Milky Way. This is made up of millions of stars.

The bar stretches out for a huge distance: around 12,500 light years from the galaxy's center. One light year alone equals around 6 trillion miles.

And GLIMPSE360 can help scientists in a lot of other ways as well.

"We can see stars being born," scientist Edward Churchwell said. Now we can start to learn more about "how stars are formed. We don't really understand the details of how stars are born."

Scientists may also be able to figure out where stars are formed.

"We can see every star-forming region," said scientist Robert Benjamin.

The new view may show scientists something else as well: how quickly the Milky Way is growing. "It tells us how many stars are forming each year," said scientist Barb Whitney.

The position of the stars in our galaxy is now visible. And scientists will be able to learn more about the dust that lies between the stars.

## **Gas Patch Mysteries**

But GLIMPSE360 has found some new puzzles. For example, it shows that space is filled with patches of gas.

These gas patches are brightest around stars that are forming, Churchwell said. But they also can be seen all over the Milky Way. “They’re floating” out in space between stars “where they have no business being. It raises the question of how they were formed.”

The Spitzer Telescope was sent into space in 2003. It was only expected to keep running for two and half years. More than 10 years later, it’s still sending back pictures.

Scientists have made a lot of use of the information from Spitzer. More than 600 scientific papers have been published.

Indeed, Spitzer has provided enough new information to keep scientists busy for many, many years. “It’s done what we wanted it to do,” Churchwell said.