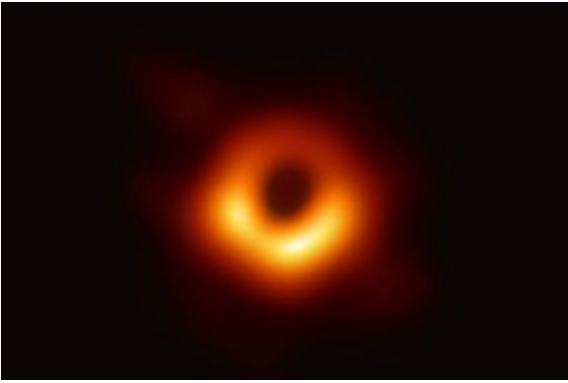


Media Lario – Images of the Universe

Bosisio Parini, Italy, 1 January 2020 – For more than a quarter century, Media Lario, a Precision Space Optics company in northern Italy, has been providing the technology to take some of the most significant and beautiful **Images of the Universe** ever seen. This work has contributed greatly to scientific research and our understanding of the world in which we live. As 2019 comes to a close, we look back at some of these achievements as well as ahead to the exciting times to come.

First Image of a Black Hole

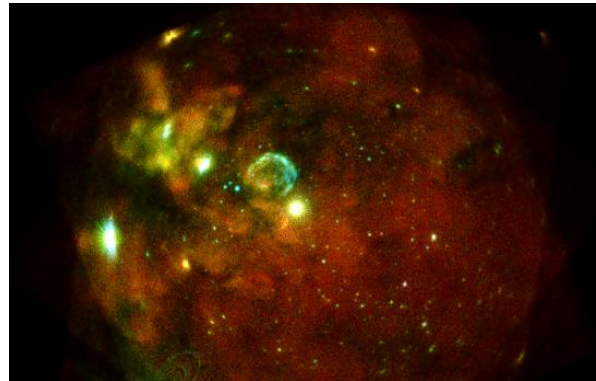


*First ever image of a Black Hole released on 10 April 2019
(credit: Event Horizon Telescope)*

In April, we proudly congratulated the Event Horizon Telescope (EHT) team for the tremendous achievement of attaining the **first ever image of a black hole**. The image was obtained by the use of multiple telescopes around the world, many of which were built using Media Lario optics. Our patented Repli-formed Optics™ process, which manufactures highly precise optical elements in a metallic process, produced very large yet highly accurate optical systems while also being strong, long-lasting and light-weight in use. This combination provided the capabilities and accuracy necessary for this coordinated and unprecedented scientific discovery.

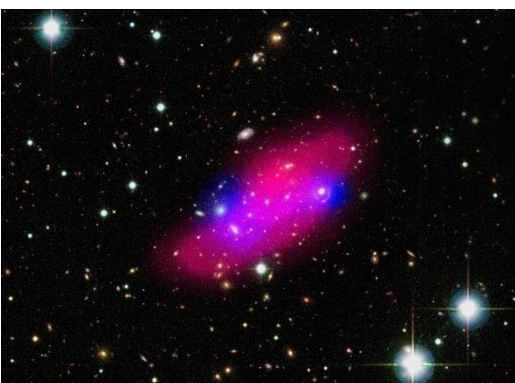
The Search for Dark Matter in the Universe

In October, we proudly witnessed the first **X-ray images of the Universe** taken by the recently launched eROSITA X-Ray Space Telescope built by the Max Planck Institute for Extraterrestrial Physics. The image of the Large Magellanic Cloud, a neighboring galaxy to ours, demonstrated its functionality and extraordinary accuracy after being launched from Earth and traveling 1.5 million kilometers to its home in space. The eROSITA is the latest in a long line of X-Ray Space Telescopes to be built with Media Lario optical technology. It will spend the coming years mapping the Universe and searching for elusive dark matter and dark energy predicted by scientists.



The Large Magellanic Cloud observed by eROSITA X-Ray telescope (credits F.Haberl, M. Freyberg, C. Maitra, MPE/IKI)

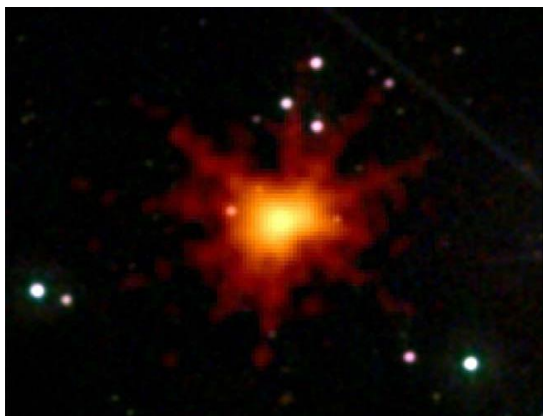
The Search for all Matter in the Universe



*Hot gas (pink) filling the gap in Bullet Group Galaxies
(credit: ESA)*

In 2018, we were humbled by the announcement that astronomers had found evidence of the last portion of predicted matter in the Universe, the so-called missing baryonic matter, using the XMM-Newton X-Ray Space telescope built with Media Lario's unique precision e-formed metal optics. The achievement was enabled by taking thousands of images over 20 years of continuous operation such as the **image of hot gas in the Universe** shown here. Images of such material are helping to close a key gap in scientists' knowledge of the Universe and Media Lario is very proud to have played a key role in making them possible.

The Previously Unseen Universe



*Gamma-ray burst seen by NASA's SWIFT X-ray Telescope.
(credits: NASA, Swift, Stefan Immler)*

Prior to working on the XMM-Newton for the European Space Agency, Media Lario built the optics for NASA's SWIFT X-Ray Space Telescope in collaboration with the Italian Space Agency, ASI. Once launched, it has taken **images of the brightest gamma-ray bursts** ever seen by scientists. Gamma-ray bursts are beams of intense radiation shot out when stars explode and become supernovas. In fact, this blast was so powerful that it temporarily blinded the SWIFT X-ray Space Telescope underscoring the importance of imaging new phenomena in the Universe. This program helped establish Media Lario as a leader in space telescope optical systems and also began our work with NASA which carries on with new and ever more exciting collaborative work today.

What's Next for Media Lario

Exoplanet Missions - Late this past year, we were also fortunate to witness the launch of the **CHEOPS** mission, a specialised telescope to be used for the search for Earth-like planets. Media Lario is proud to have supplied the primary optical element.

Work at Media Lario is also underway for the highly specialized optical system for **ARIEL**, a European Space Agency (ESA) Space Telescope set for launch in 2028 which will study the atmosphere of Earth-like planets using Infrared light, as well as on the precision optics for **PLATO**, an ESA exoplanet mission set to launch in 2026.

X-Ray Research of the Universe - Media Lario has initiated work on the primary optics for the **Einstein Probe**, an X-Ray Space Telescope built by the Chinese Academy of Sciences which when launched will make a broad X-ray survey of the Universe.

Media Lario's technology was also selected by ESA for **ATHENA**, the most advanced and ambitious X-Ray Space Telescope ever to be built. Set for launch in 2031, its primary optics, incorporating nearly 1,000 individual parts, will be integrated and aligned with our technology. When operational, ATHENA will search Black Holes and other previously unseen phenomenon in the Universe.



Jeff Lyons, CEO of Media Lario, reflected on these events, "Media Lario does not stand alone. We benefit greatly from the ability to partner with world leading space agencies and companies which has been earned through many years of hard work and dedication by our team. I feel privileged to be a part of it and look forward to 2020 and beyond."

Media Lario is located north of the industrial hub of Milan, Italy, in the region of Lombardia and Lake Como, an area rich with heritage and expertise in the precision optical mechanical industry.

Media Lario S.r.l.

Via al Pascolo

23482 Bosisio Parini (LC) – Italy

 @media.lario.srl  @MediaLario



*Soyuz rocket with CHEOPS lifting off from Kourou
(credits: Arianespace)*



For more information on Media Lario S.r.l., please visit us at <http://www.medialario.com/>