

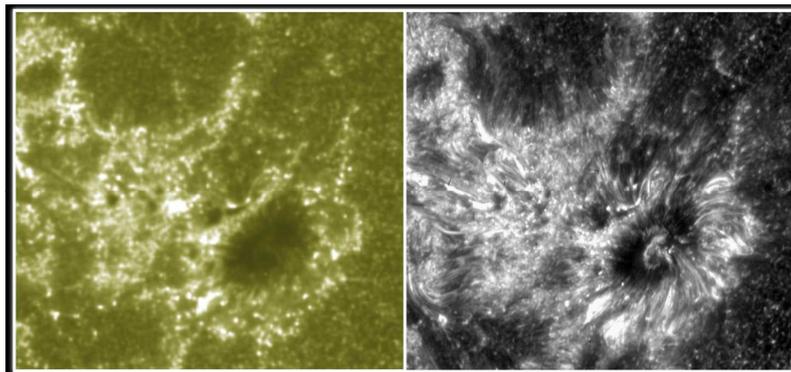
Press Release

October 2013

First look at the Sun's Atmosphere from the IRIS Spectrograph (NASA) equipped with HORIBA Jobin Yvon gratings

The telescope door of NASA's Interface Region Imaging Spectrograph (IRIS) equipped with HORIBA Jobin Yvon diffraction gratings was opened on July 17, 2013. The IRIS spectrograph has begun to observe with unprecedented detail the lowest parts of the sun's atmosphere, known as the interface region.

"The quality of images and spectra we are receiving from IRIS is amazing," said Dr. Alan Title, IRIS principal investigator. IRIS data will allow scientists to study and better understand the energy transport on the sun.



These two images show a section of the sun as seen by NASA's IRIS spectrograph, on the right and NASA's SDO on the left.

The diffraction gratings for the IRIS spectrograph have been produced by HORIBA Jobin Yvon S.A.S. Longjumeau – France. The space-qualified production process from HORIBA Jobin Yvon was used to manufacture the NUV and FUV replica gratings, 3600 gr/mm groove density, 23x41 mm dimensions, designed to reach very high efficiency and very low stray light. These high groove density gratings, working in the second order, provide unrivalled resolution as well as high efficiency for this very electromagnetic grating whose groove profile and coating required several iterations. Cutting edge technologies and new coating developments were used to achieve IRIS gratings specifications.

The development of these IRIS gratings is the result of a fruitful collaboration between Montana State University IRIS group, lead by Associate Professor Charles Kankelborg and HORIBA Jobin Yvon's team. Montana State University was involved in the design of the spectrograph and is now involved in IRIS science operations and data analysis.

As Prof. Charles Kankelborg, in charge of gratings qualification, wrote to HORIBA Jobin Yvon's team: "You can see the fantastic data that is being obtained with the IRIS gratings. The spectrometer's resolution exceeds our expectations. Some of the very narrow lines from neutral atoms show us

pixel limited resolution. Thanks for all your efforts! It was a pleasure working with you on IRIS. Now we look forward to good solar observations for years to come”.

After the set of Cosmic Origin Spectrograph (COS) gratings on the Hubble Telescope in collaboration with CASA, after OCO2 project with Jet Propulsion Laboratory, another successful space flight project powered with HORIBA Jobin Yvon’s gratings.

HORIBA Jobin Yvon S.A.S. company, part of HORIBA Scientific (HORIBA Group), is a world leading company in spectroscopy, analytical instruments and diffractive optics for research and industry. HORIBA Jobin Yvon has been selected and participates to a large number of NASA or ESA space-flight missions by developing very high performances diffraction gratings for spectrograph. HORIBA Jobin Yvon designs, manufactures and tests a large range of scientific diffraction gratings for Lasers, Space flights, Astronomy and Synchrotron applications.

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