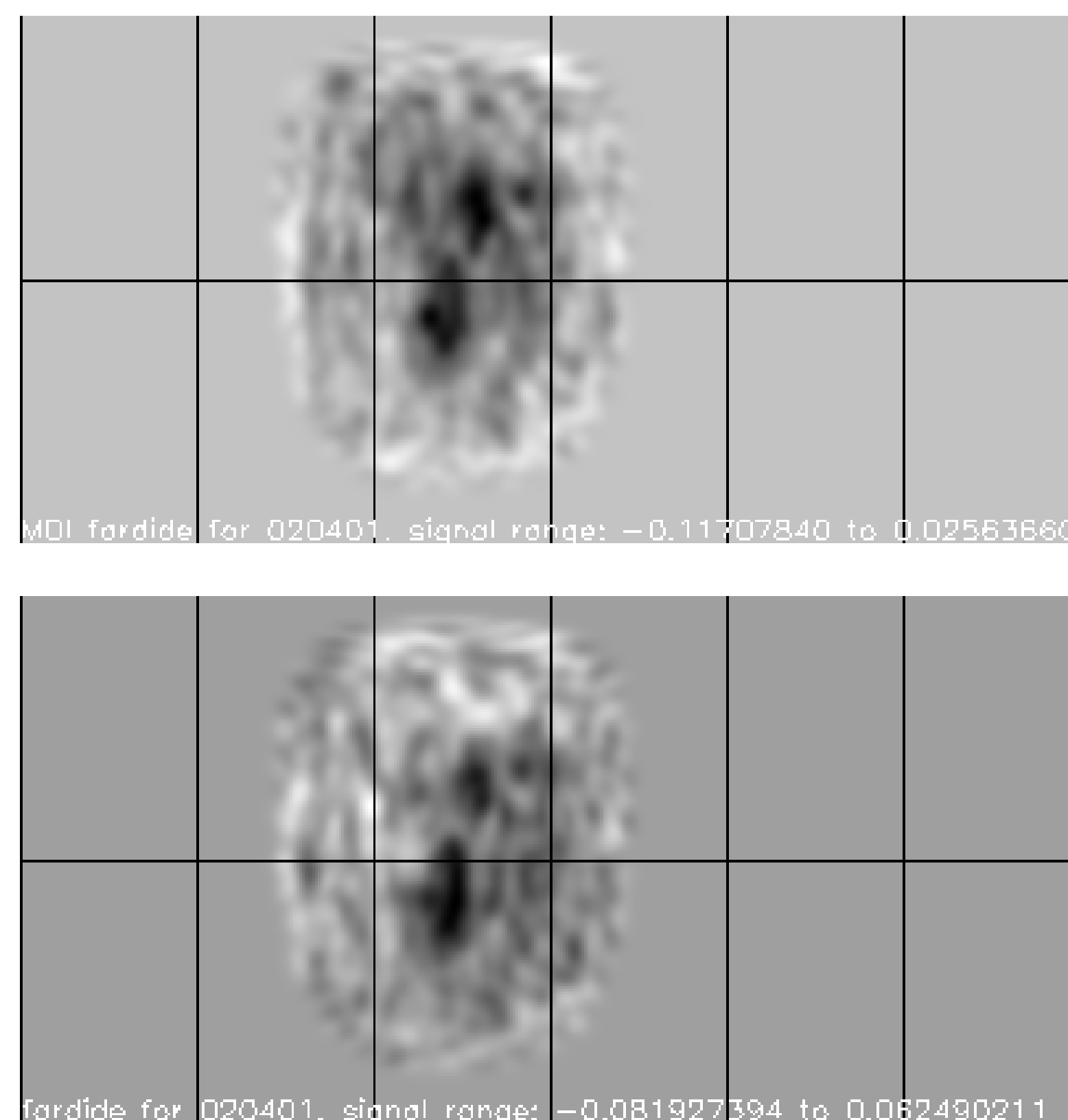


GONG Near-Realtime Active Region Imagery as a Pathfinder for LWS/SDO

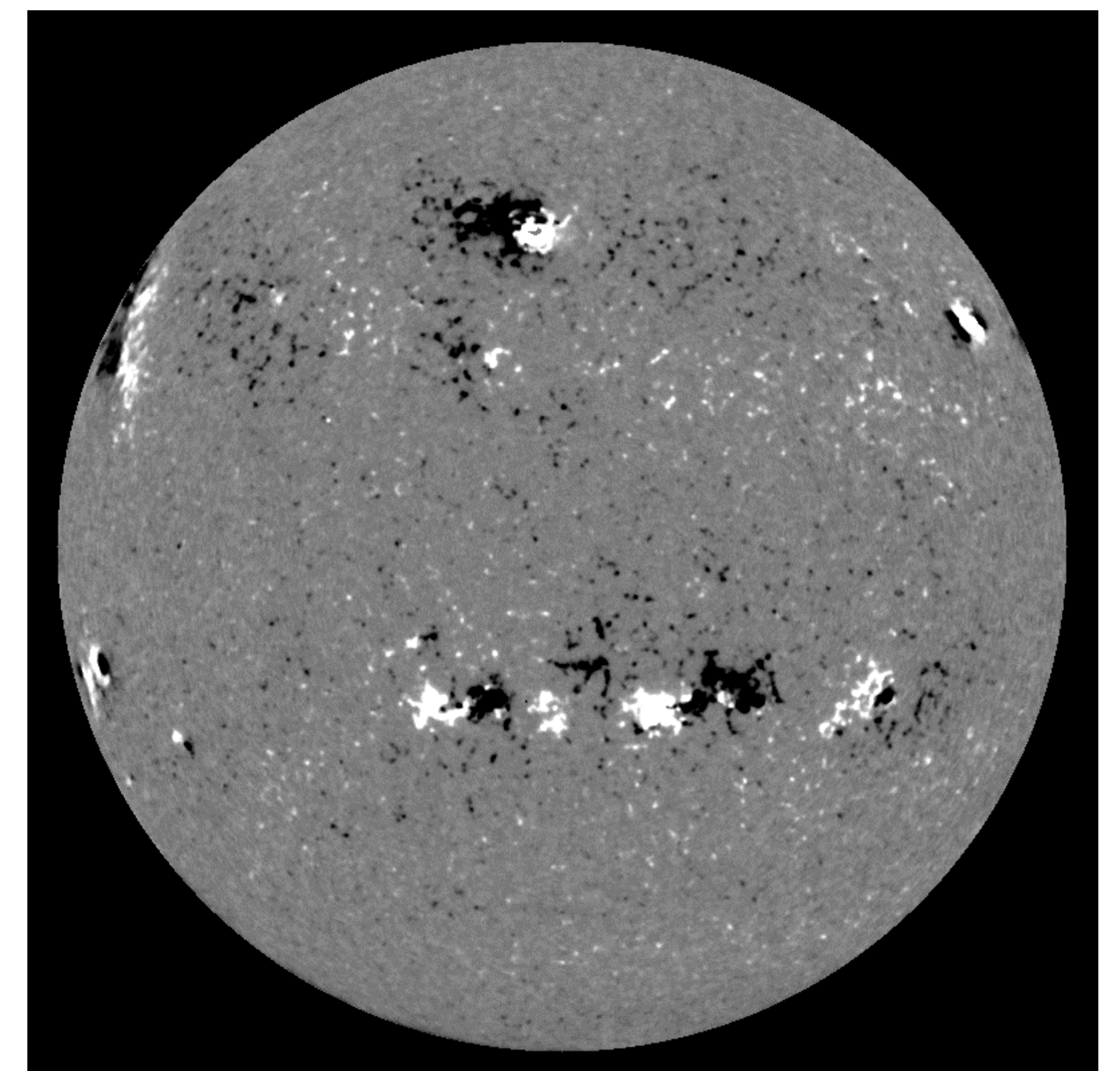
Doug Braun¹, Kerri Donaldson-Hanna², John Harvey², Rachel Howe², John Leibacher², Charles Lindsey¹, Anna Malanushenko³, and Jeff Sudol²

¹ Colorado Research Associates, ² National Solar Observatory, ³ University of St. Petersburg

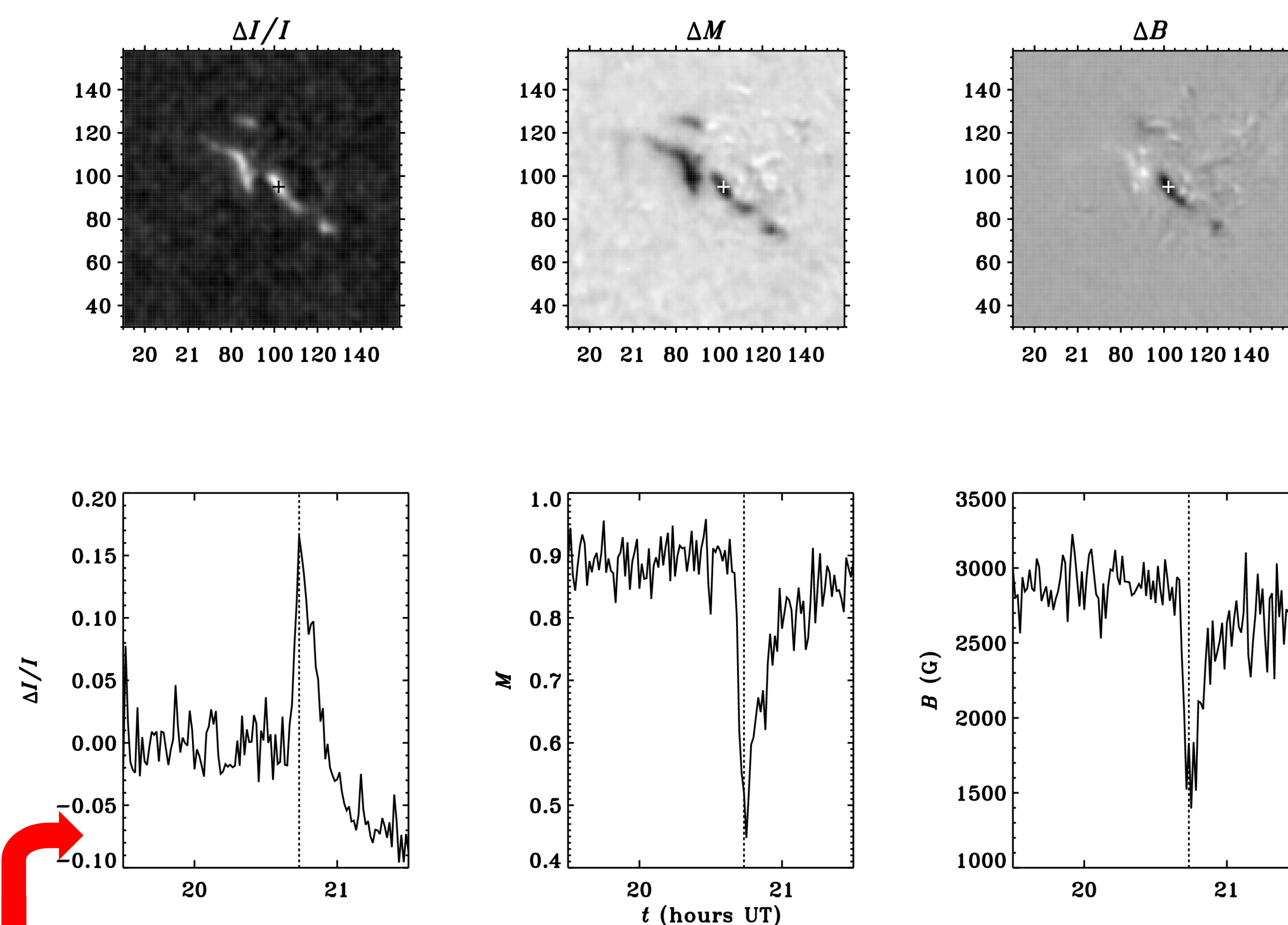
The six-site Global Oscillation Network Group (GONG) helioseismic network now produces once per minute magnetograms, as well as pseudo-continuum and line strength maps in the Ni I 6768 Å line with 2.5 arcsecond pixel resolution, and twice a day images of the farside of the Sun, in near-real-time.



Images of the farside show great predictive potential, and GONG will soon be producing such images twice per day. **Above:** an MDI image of changes in the sound travel time over a synoptic chart of the whole Sun. **Below:** a simultaneous GONG image.



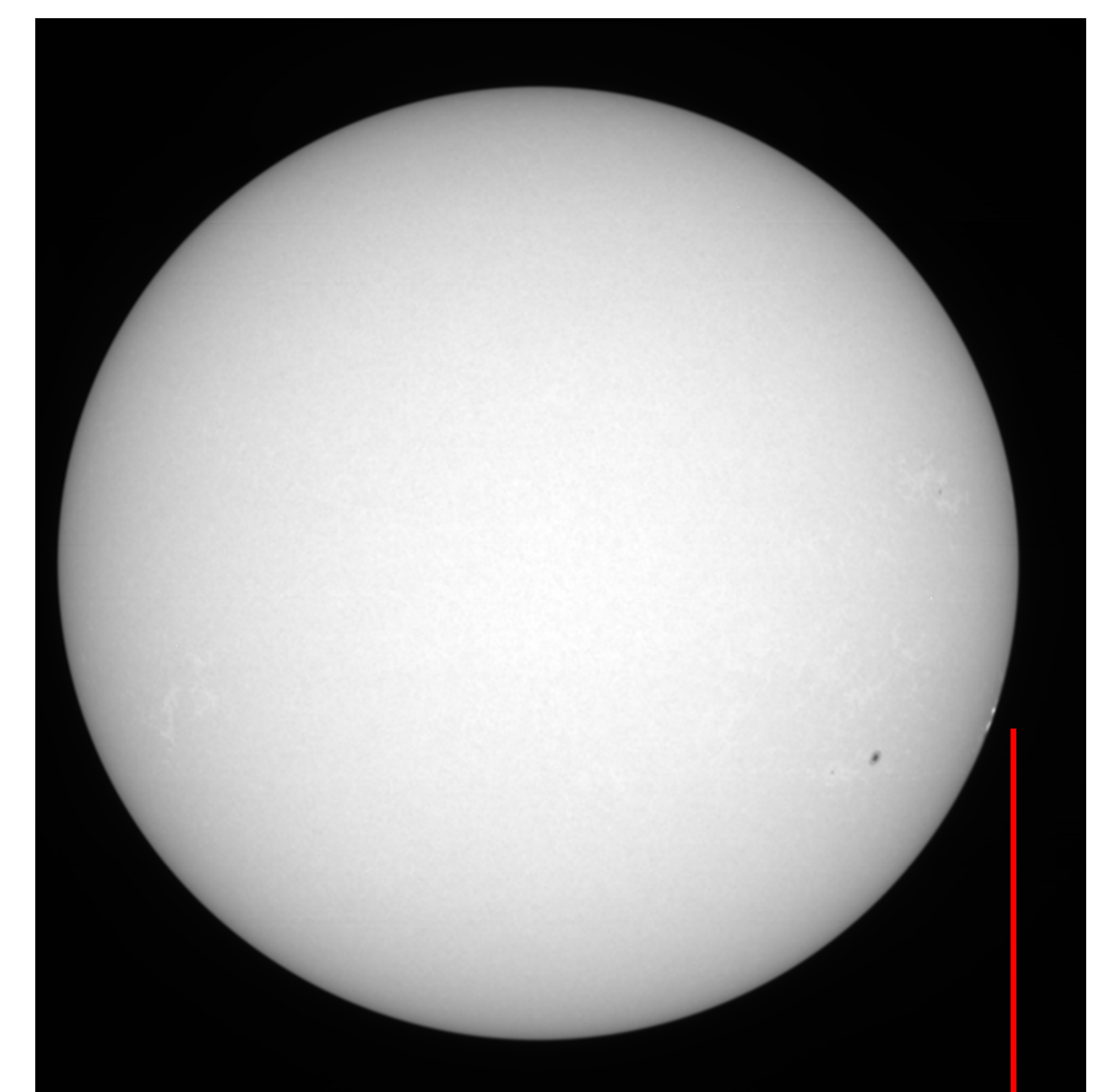
The online magnetograms are summed over five minutes and have a noise of 1 gauss and a zero-point uncertainty of as much as 10 gauss, which a hardware fix should be able to reduce by an order of magnitude, with the prospect of further improvements in the calibration or a new modulator.



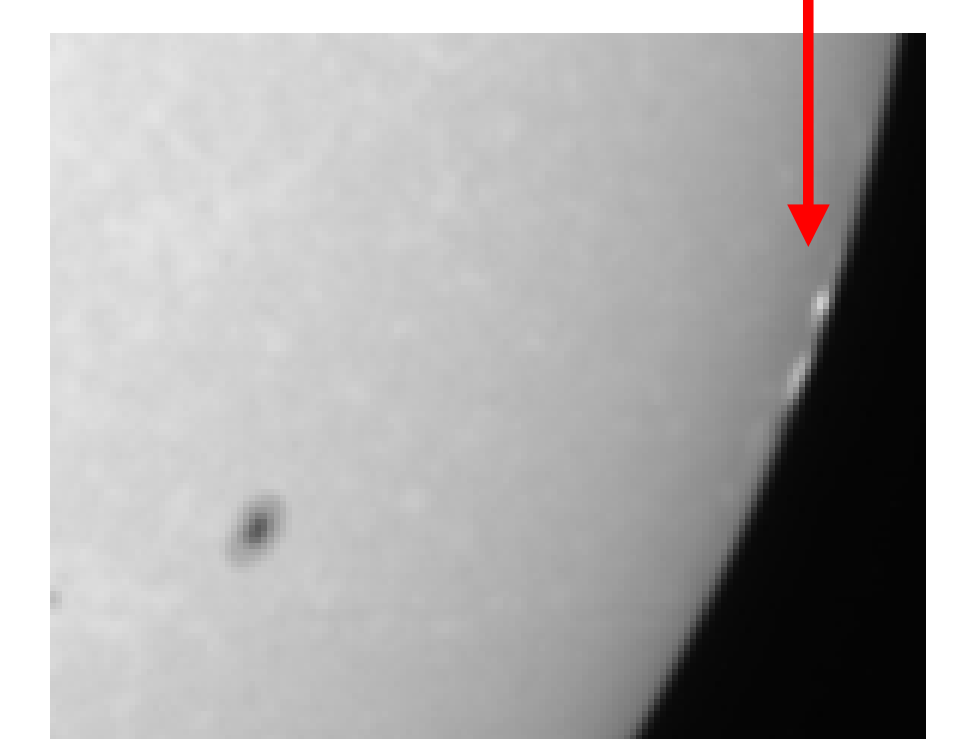
The X10 flare in AR 10486 on 28 October 2003 displayed significant magnetic field and "white light" changes. The signature of the flare is clearly visible as a 30% increase of intensity, accompanied by a 50% decrease in the line strength and significant changes in the magnetic flux strength and configuration.

Above: the temporal variation of the total intensity, line strength, and magnetic flux at the pixel indicated by a cross in the images.

Down the left-hand side: one-minute-averaged, 250-arcsecond-square images of the total intensity, line strength, and magnetic flux starting at 2041, with the 2031 image subtracted.



Continuous once a minute imagery turns up all sorts of interesting things such as this white light flare at the limb on 4 Nov 2003



Acknowledgments

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