

The Imaging Source Astronomy Cameras: First Choice For Solar Imaging in CaK Light

The “violet sun” can be observed in two dark absorption lines at the wavelength of 393,37 nm (3933,7 Å), called CaK line and 396,85 nm (3968,5 Å), called CaH line.

All available amateur filters are working in the CaK line at 393,37nm. This is the violet end of the spectrum and the human eye is nearly “blind” at this wavelength. Young observers may see some details in visual observation directly through the telescope but older people just may see a very, very dark and blue disk without any details, because the responsibility of the human eye is declining with every year of life.

The Sony CCD chip inside the [DMK cameras](#) is truly very sensitive at the wavelength of 393.37nm. Exposure times for all images shown here are ranging between 1/5.000sec (whole disk) and 1/1.000sec (details). Viewing the live image within the [IC Capture.AS](#) window on the screen of the control desktop/laptop is breathtaking !

At this wavelength man observe the sun at the lower chromosphere (just the boundary layer between the photosphere in white light (continuum) and the chromosphere) while at the wavelength of 656,28nm (H-alpha) the upper chromosphere (boundary layer to the solar corona) is visible.

The solar image in CaK light seems to be alike to white light observations (Continuum). But indeed sun spots appearing in a much more higher contrast, also the so called “super granulation” and the network of bright surfaces is – in comparison to white light images – visible above the whole solar disk. Solar prominences are also visible in CaK light, but not at that high contrast and brightness as in the H-alpha line.

Instrumentation:

Filter: Lunt K-Line BF 1200 module < 0.24nm

Telescopes:

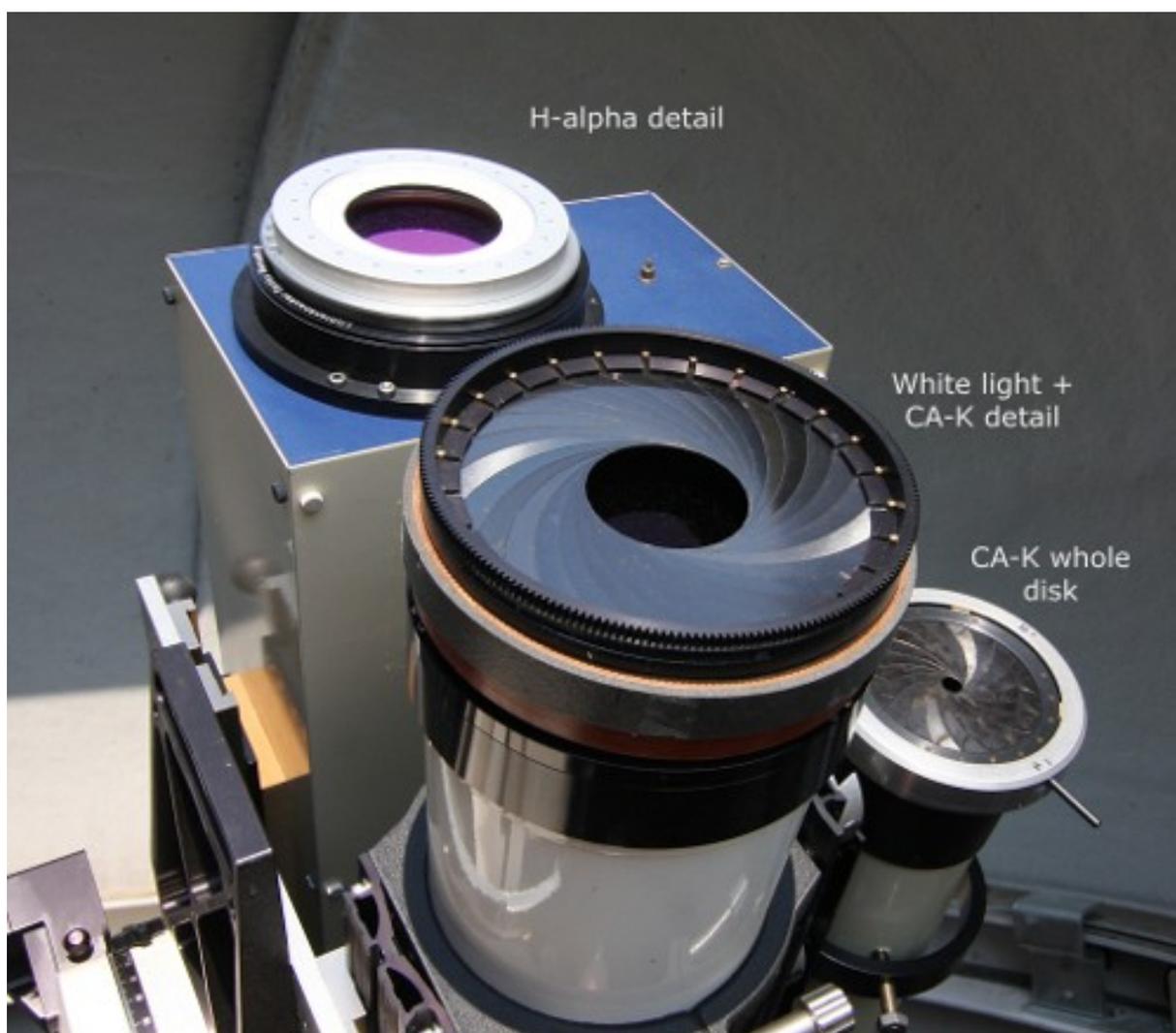
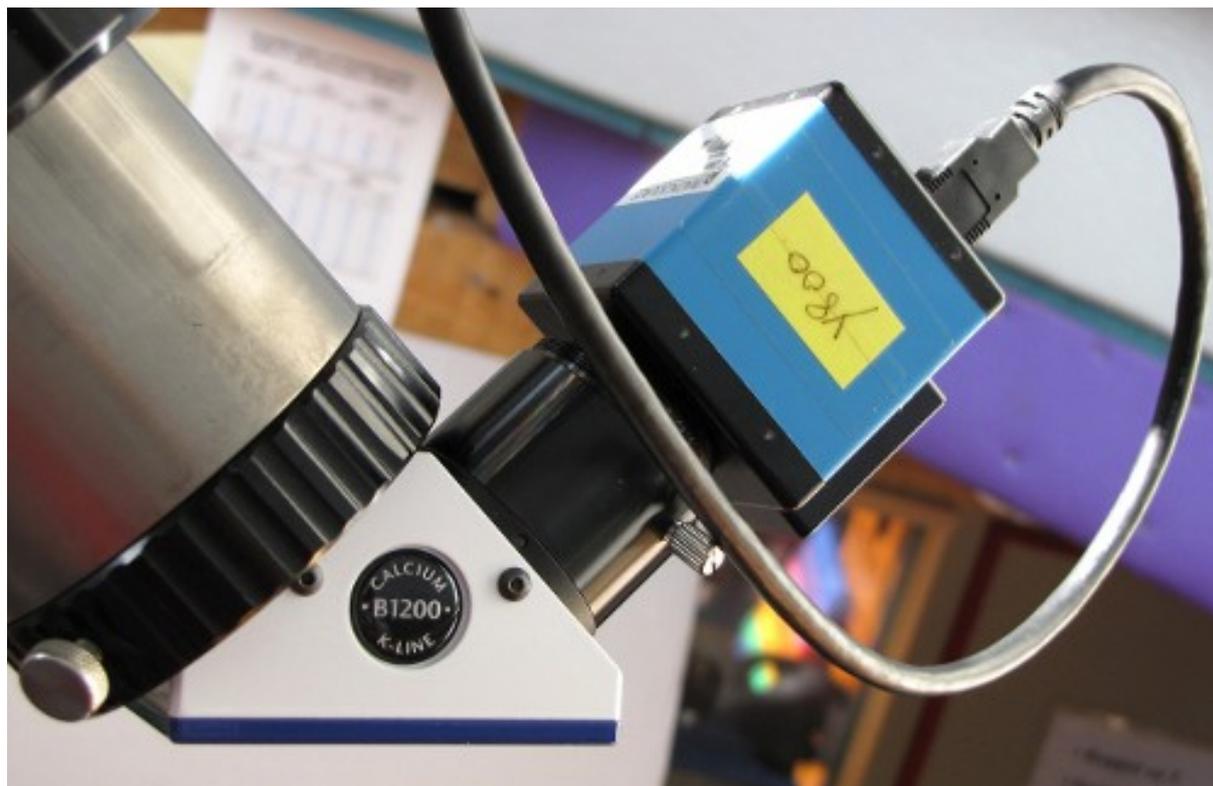
Whole Disk: Televue NP 101 refractor with 500mm focal length, stopped down to 90mm

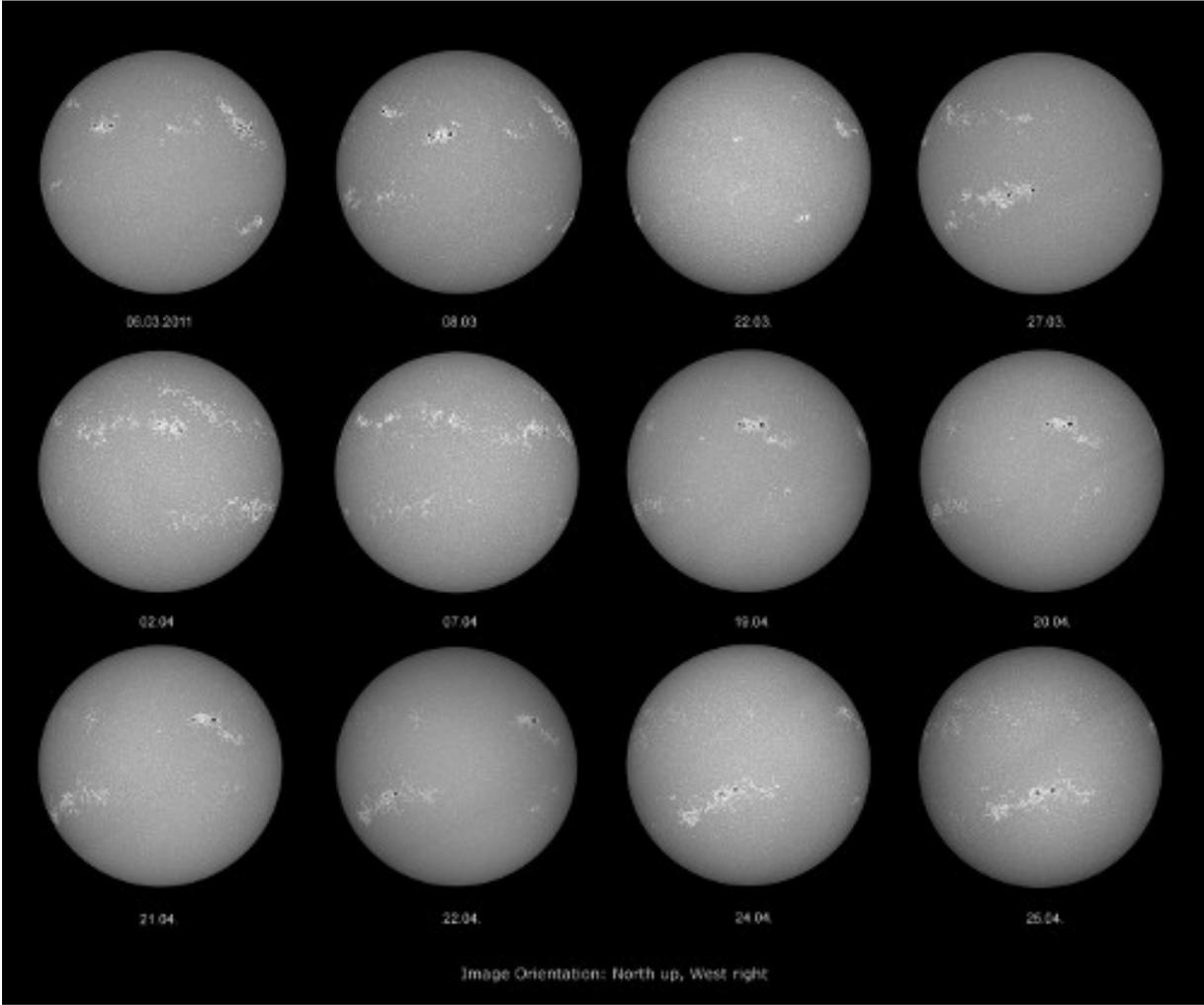
Details: AstroPhysics EDF 155 refractor. Images taken with focal length between 1.000 and 2.000mm, stopped down to between 100 and 130mm

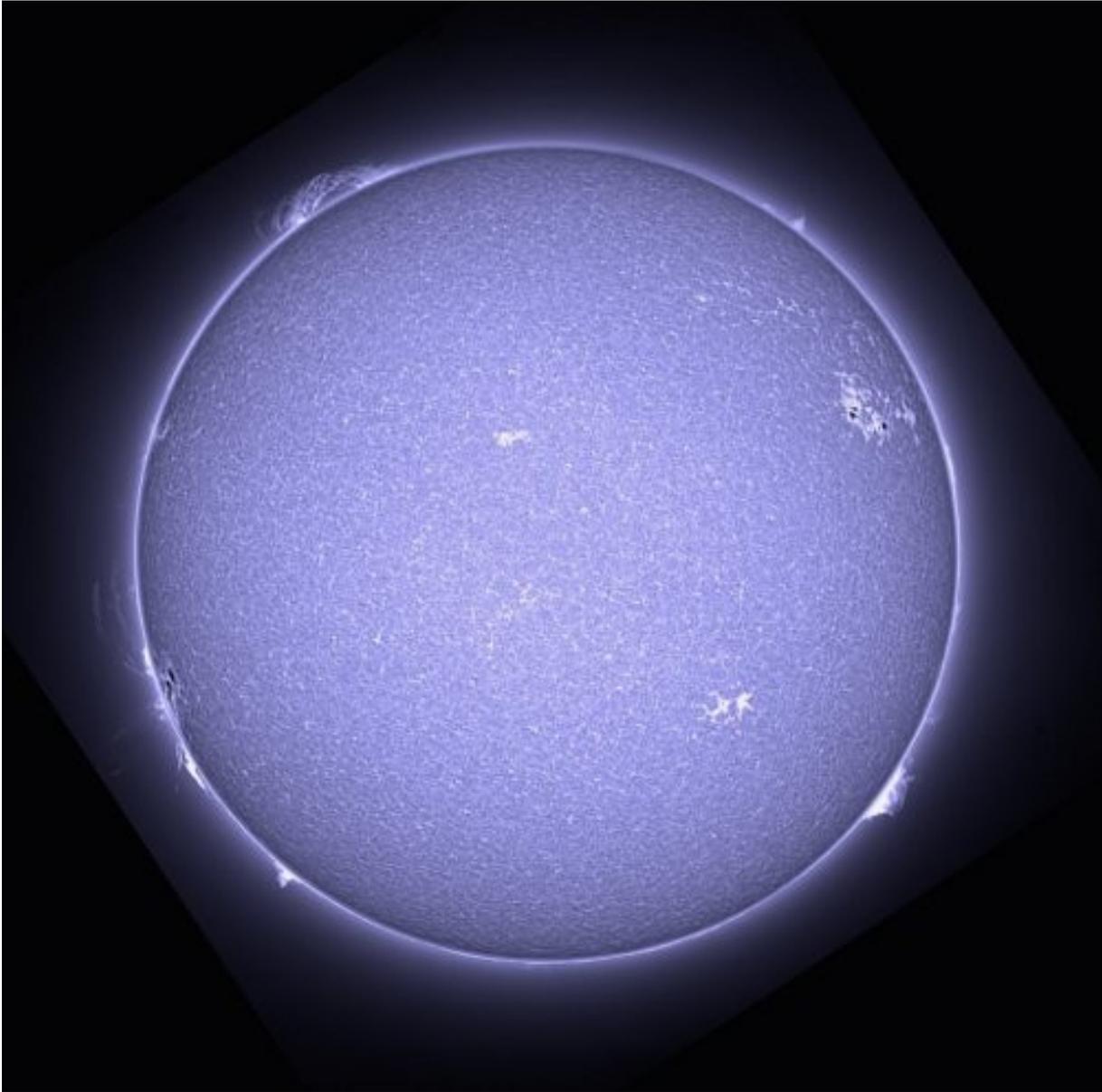
Image processing:

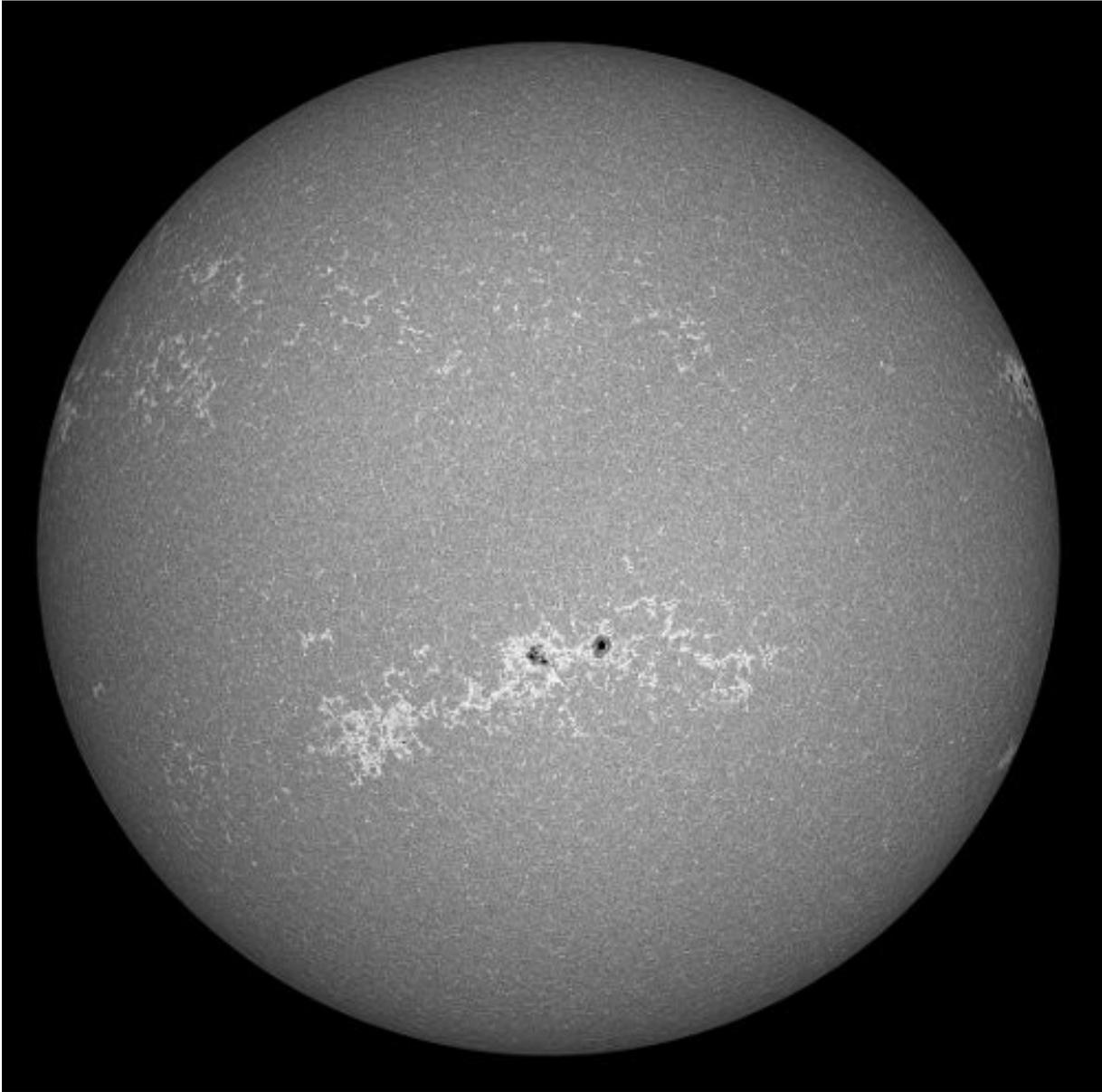
15% of each 1.200 frames stacked and wavelet sharpened with AviStack (M. Theusner). Final processing (and colouring) with Photoshop CS2. All images are taken with a [DMK 31AU03.AS](#).

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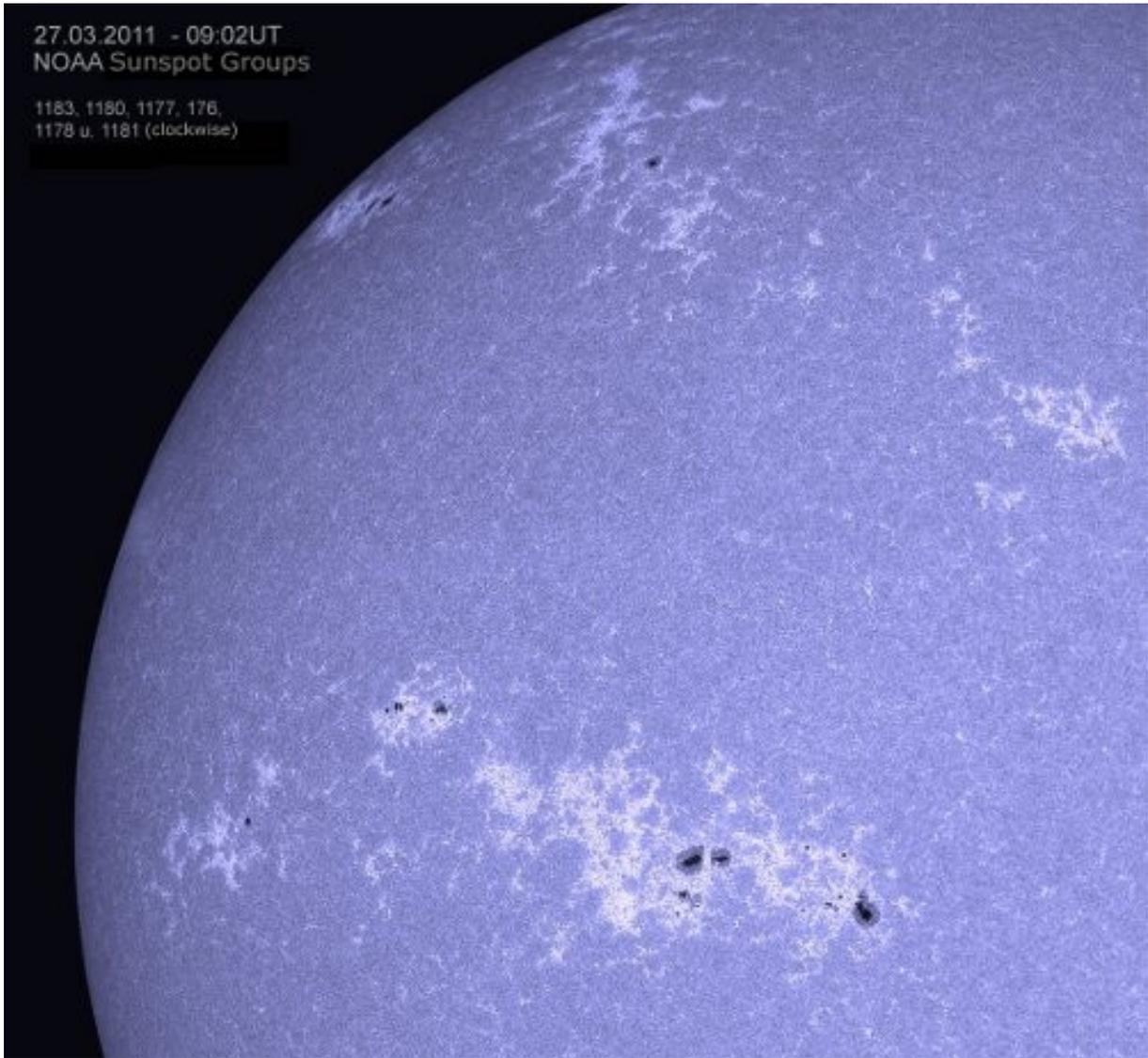


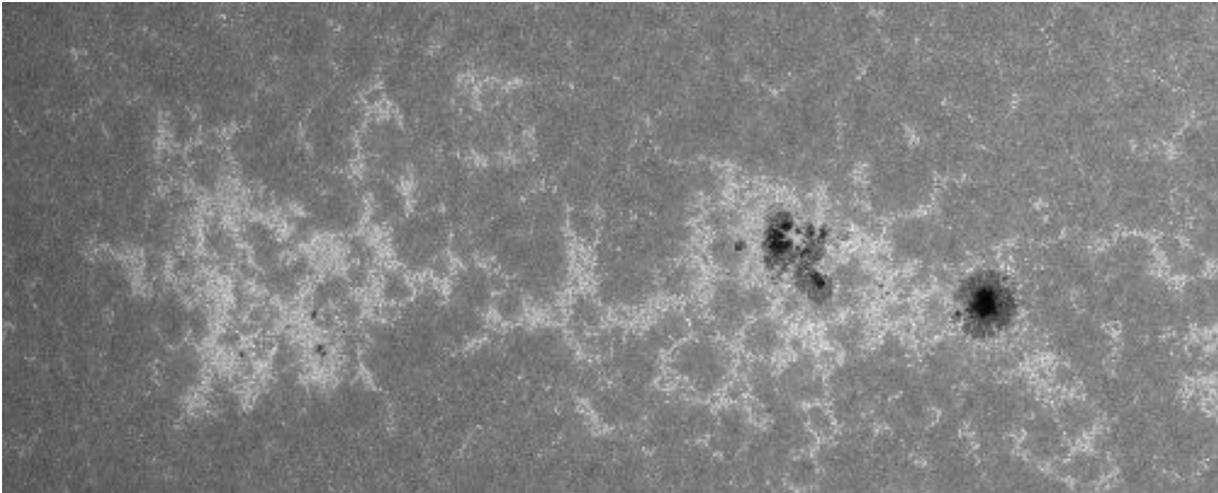
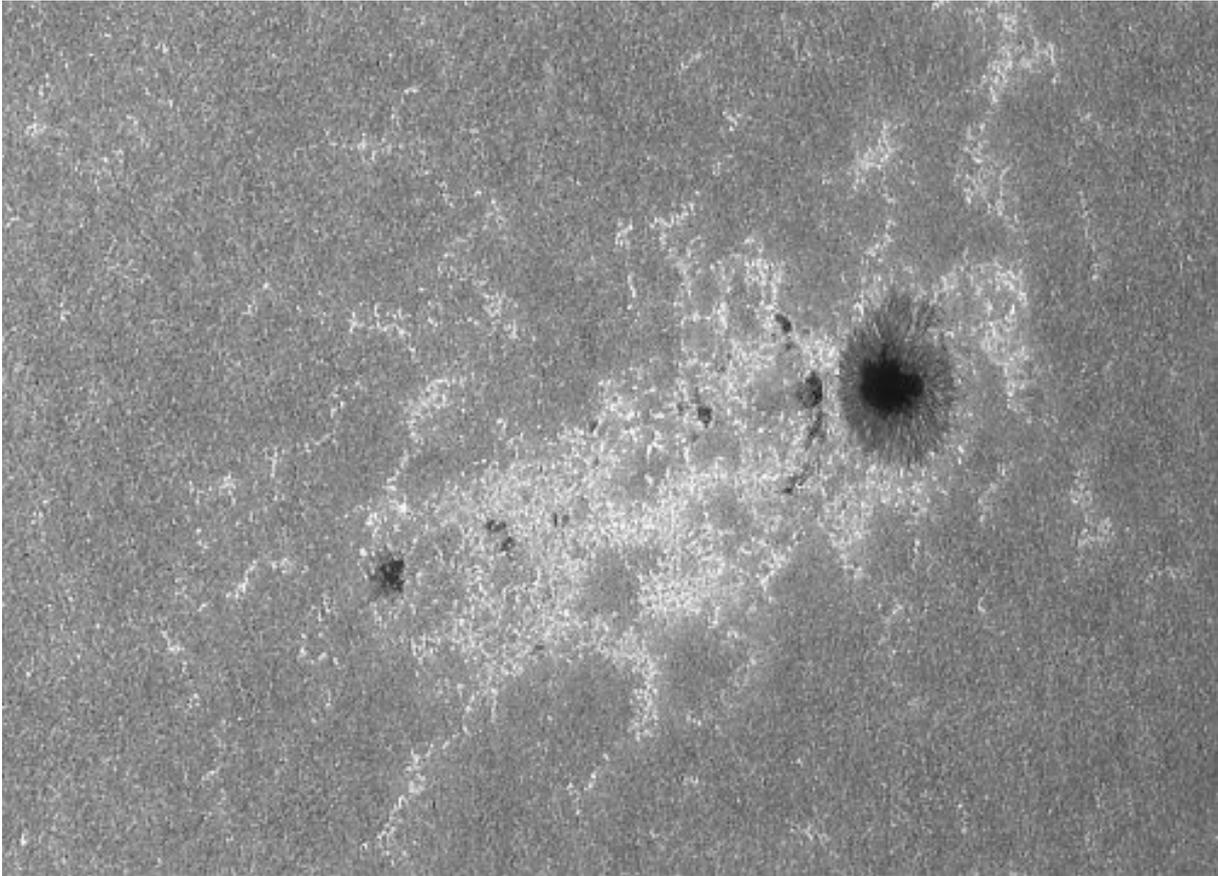


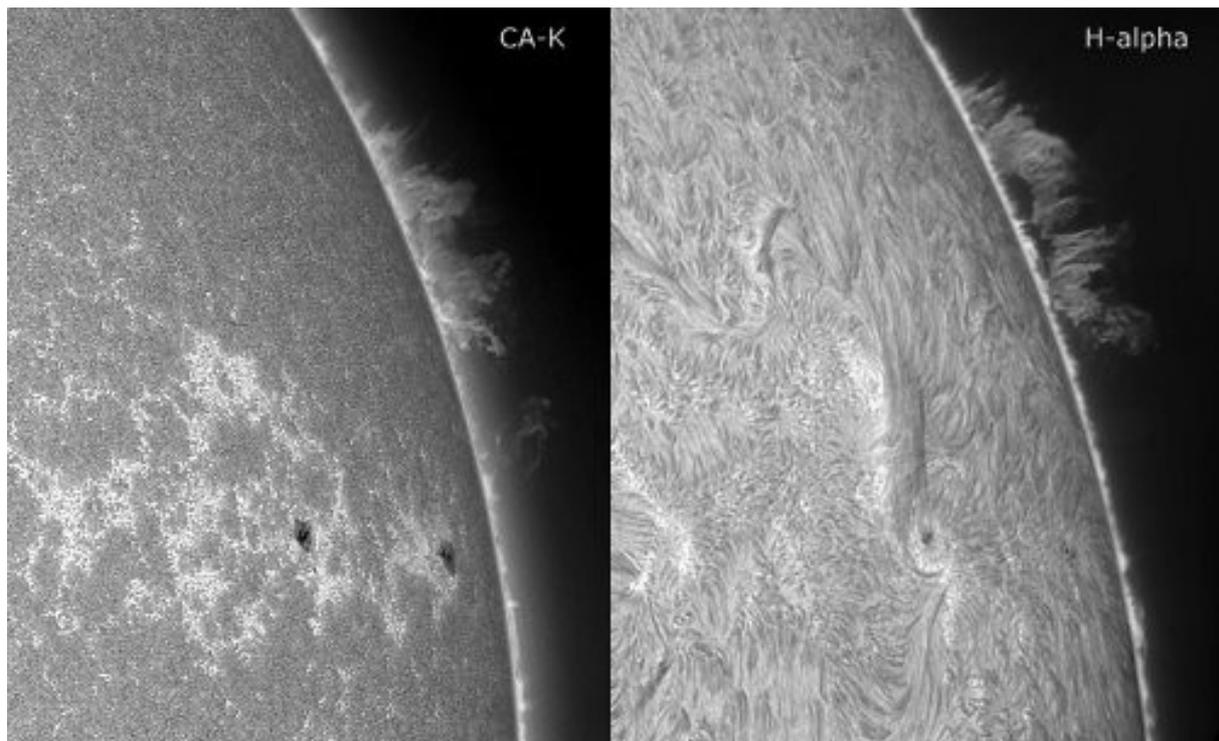


27.03.2011 - 09:02UT
NOAA Sunspot Groups

1183, 1180, 1177, 176,
1178 u, 1181 (clockwise)







Remark: The coloured images shows no “true colour”. They also was taken with the monochrome DMK 31AU03.AS and coloured manually with Photoshop CS2.