Tucson (NSO) Trip Report

For AAVSO by R. Howe 02/02/2013.

Held at NSO/NOAA, Tucson, 21 - 25 January, 2013

http://www.nso.edu/

The Tucson SSN workshop was sponsored by the National Solar Observatory (NSO), and the Air Force Research Laboratory (AFRL) http://www.nso.edu/node/171 . The Tucson workshop focused on the progress and additional evidence addressing the key problems of understanding solar indices as identified in previous workshops in Brussels and Sunspot, NM. Invited were European experts and NSO experts in the field of long-term tracers of solar activity for most recent use of ground based and statellite instruments. One goal was to make a synthesis of archival data and progress of defining solar indices to define and update the action list in view of the next workshop, which will be in October 2013, somewhere in Europe? Another goal of this (from Ed Cliver) workshop was to extend the reconciled SSN time series back from Schwabe (1826) through Staudacher (1750), as well as :

-Develop a standard SSN time series that includes estimates of uncertainty or variance.

- Issue a statement (or warning) on the reality (or not) or long-term trends.
- Publish explicit and justified recipe for calculating the standard SSN time series, which includes adjustments, from the original (unadjusted) data.
- Publish or present for wide dissemination the original (unadjusted) data (from Jeffrey Love).

General observations

The presentations and agenda for the Tucson meeting can be found at this web site: http://www.nso.edu/node/169 . There were many differing views, all different, but all based on the same kind of common-sense approach to the above goals, and all seek concrete social, political and scientific reforms to solve the standard SSN time series.

Meaning of the Workshop

- Reconcile/understand the discrepancy between G & I SSN series (1610-present)

- Document tools that can be used to keep track of the SSN for the foreseeable future (regular ionospheric variation, F10, sunspot area)

- Understand what happened during the recent solar minimum (and perhaps the Maunder Minimum)

- Publish a vetted and agreed upon single SSN time series, with error bars, that can be used as a bridge to the millennia of proxy solar data in ice cores and tree rings (from Ed Cliver)

Ad hoc requests for AAVSO sunspot data sets

I have sent the AAVSO raw sunspot data (2009 to 2013) and an image of data collected from the SunEntry header form to Laurence Wauters and Frederic Clette of the Royal Belguim Observatory (ROB) as they have an interest in polling their observers on the following information: observing setup, optical resolution, how long has the current telescope configuration been in use, observing technique, etc, and also, the "neutrality" of observations, i.e, is there any external reference used to settle the group splitting or to verify the existence of small spots or of new spots near the East limb.

Marching Orders for AAVSO

I was asked to assist (co-author) in the calibration of visual observers, which may appear as a section of the final document on a standard for the SSN time series.

SSN workshop Web site

http://ssnworkshop.wikia.com/wiki/Home

On this site, you can find general information, the announcements and the presentations of the 1st 2nd and 3rd SSN Workshop. All presentations of this 3rd Workshop will be added after the meeting. Leif is the curator for the website so please contact him with any questions or suggestions (leif@leif.org).

Conclusions

The topics of this workshop include progress on the understanding of sunspot weighting, calibration of the sunspot area time series, the distribution of sunspots during the most recent solar minimum, new results on the Livingston-Penn effect, an update on the relationship between the SSN and F10.7 cm (radio) flux, correlation of cosmic ray and geomagnetic data with the sunspot number, and sunspot measurements from space. (from Alexei Pevtsov)