

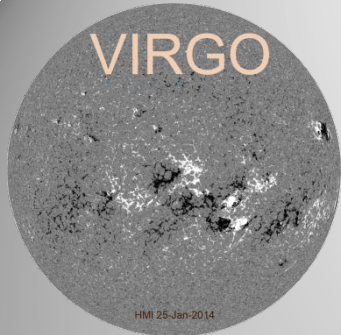
New VIRGO Version 6.4 and the update of PMOD Composite, a Summary

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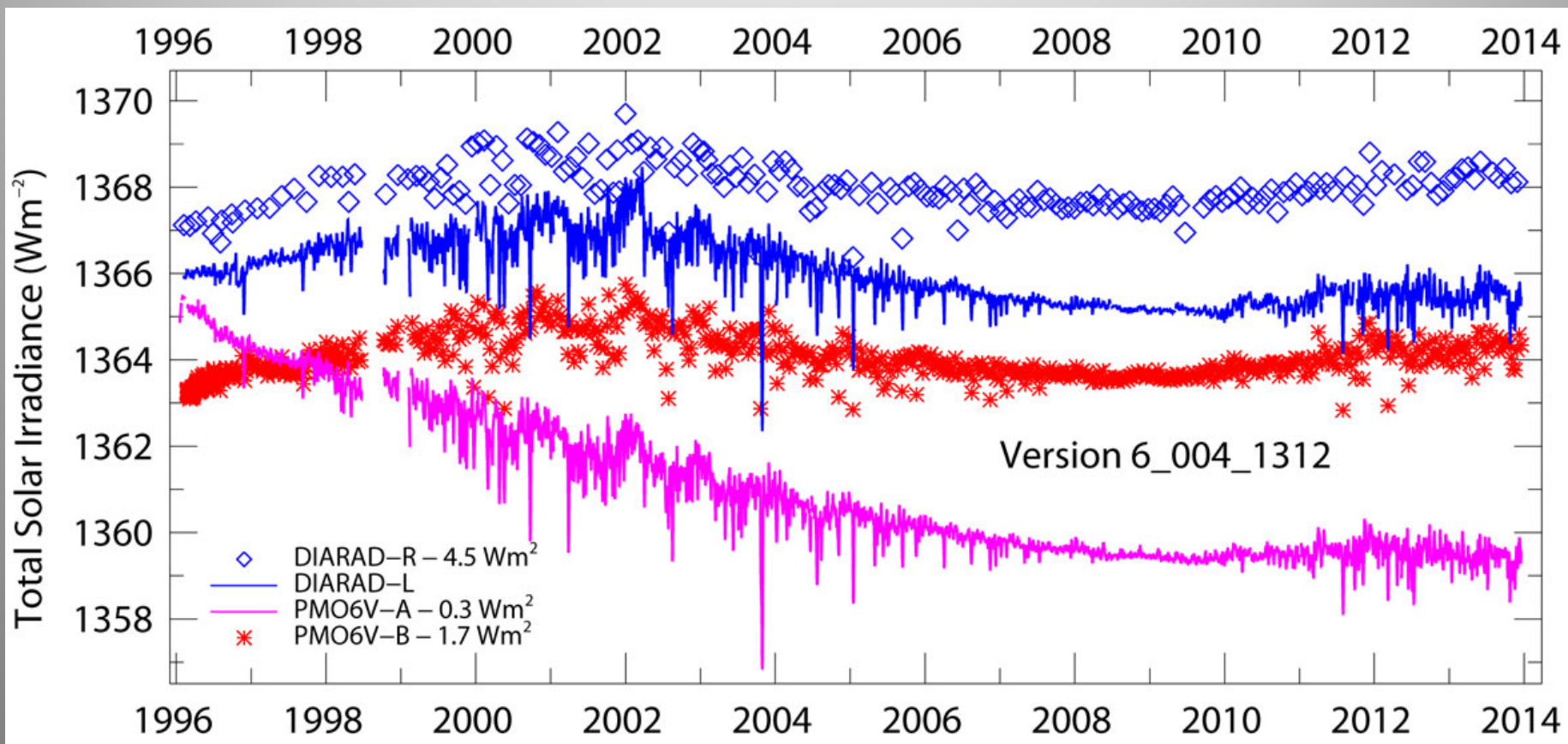
CH 7265 Davos Wolfgang

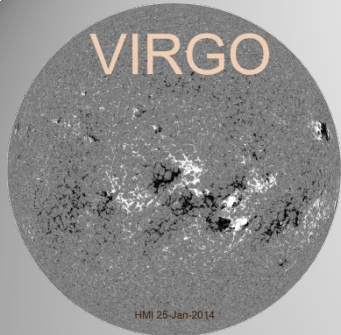
This is work in progress – not all details may be yet explained properly



Level 1 VIRGO Data

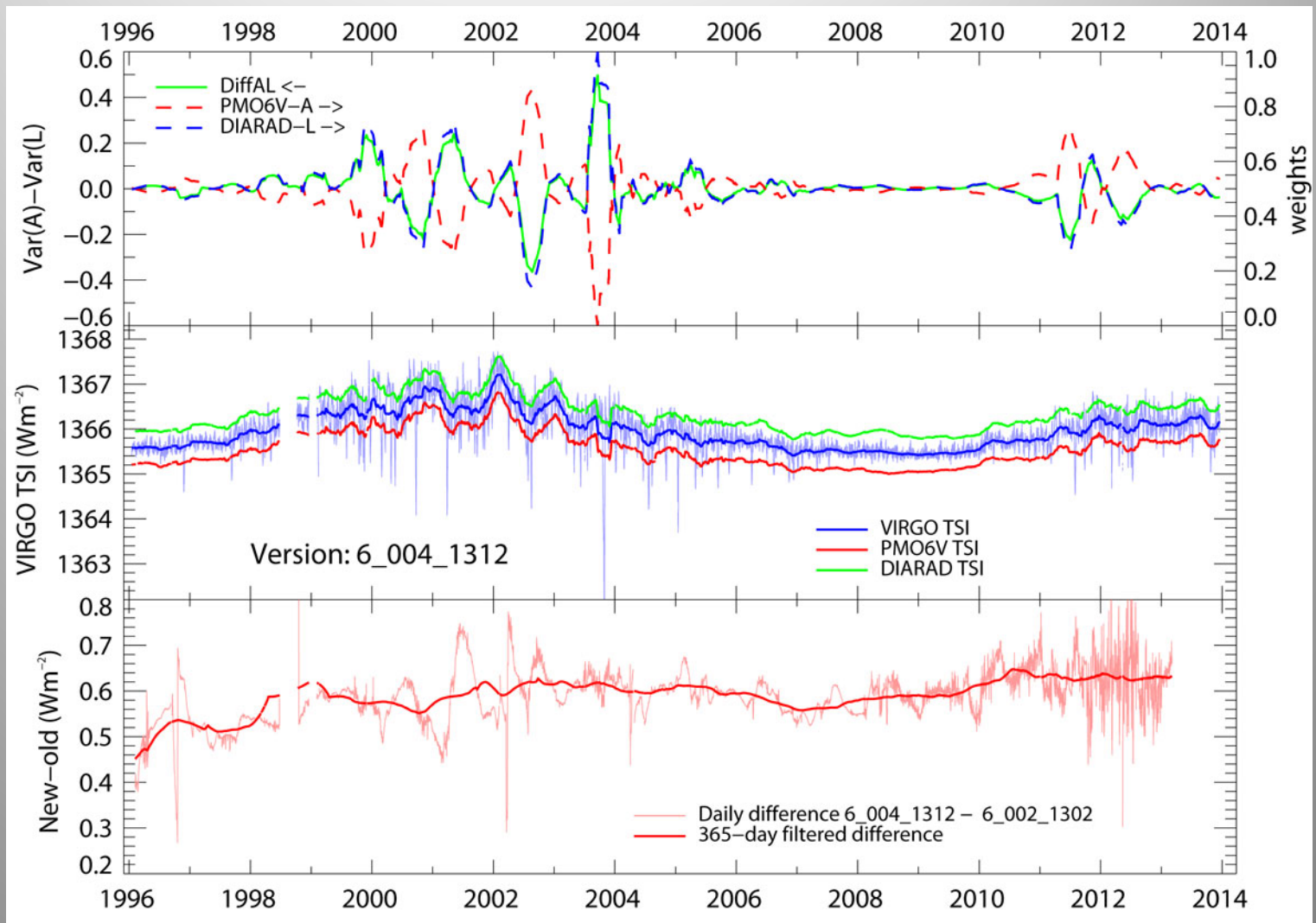
- The early increase is only observed for the PMO6V radiometers and not for DIARAD. It is due to a blackening of the primary aperture which reduces the scattered radiation into and back from the baffle to the cavity.
- DIARAD shows less degradation than PMO6V, but it shows a non-exposure dependent increase of sensitivity

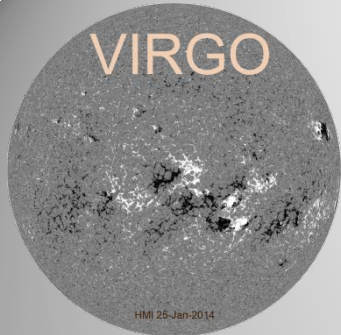




Combine corrected PMO6V and DIARAD to VIRGO 6.4 and compare to 6.2

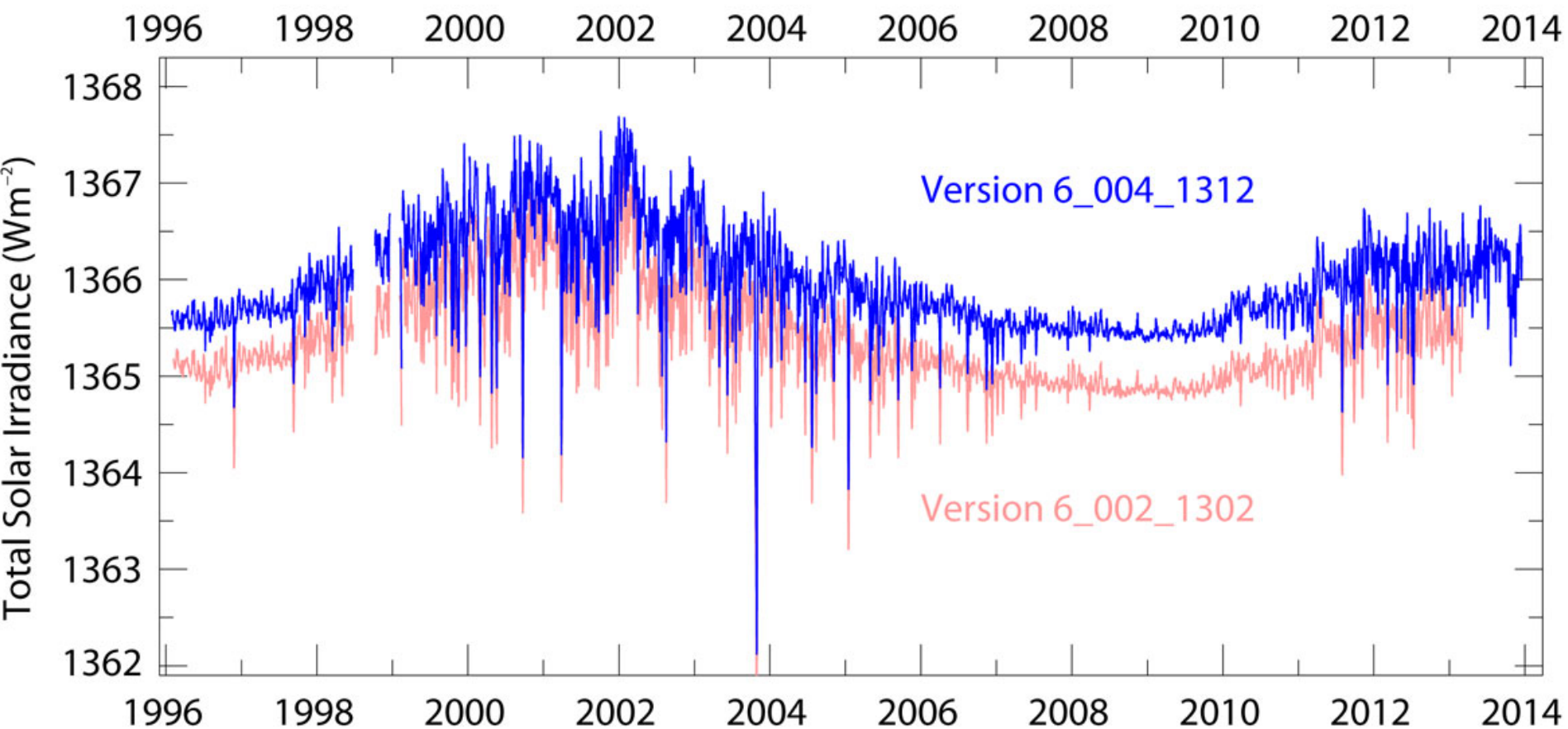
Details of the VIRGO 6.4 evaluation are given in the poster 'Total Solar Irradiance from VIRGO Radiometry: an update to Version 6.4'. Here is the final result.

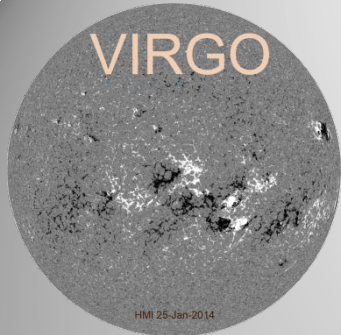




Comparison of VIRGO 6.2 and 6.4

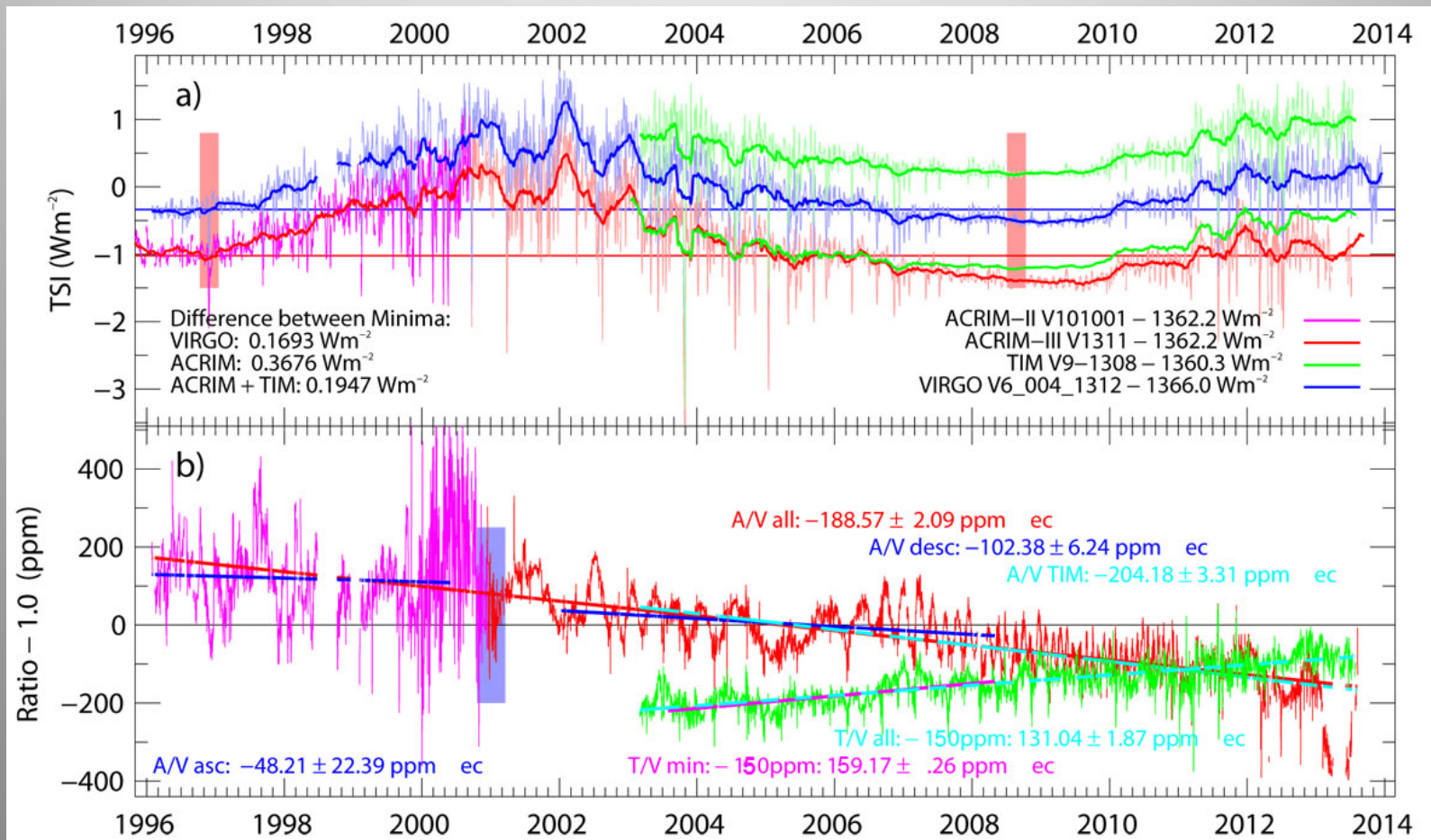
- The difference in scale is due to the normalization to the first value of PMNO6V-A which changed due to the new early increase correction.
- Especially at the beginning we get a less variable record – mainly due to the better correction of the early increase of PMO6V-A

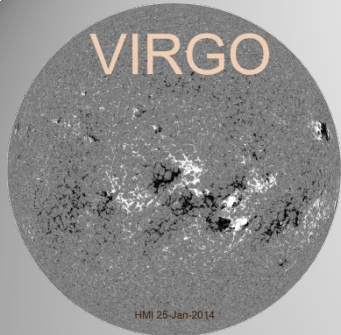




Comparison with ACRIM 2 and 3 and TIM

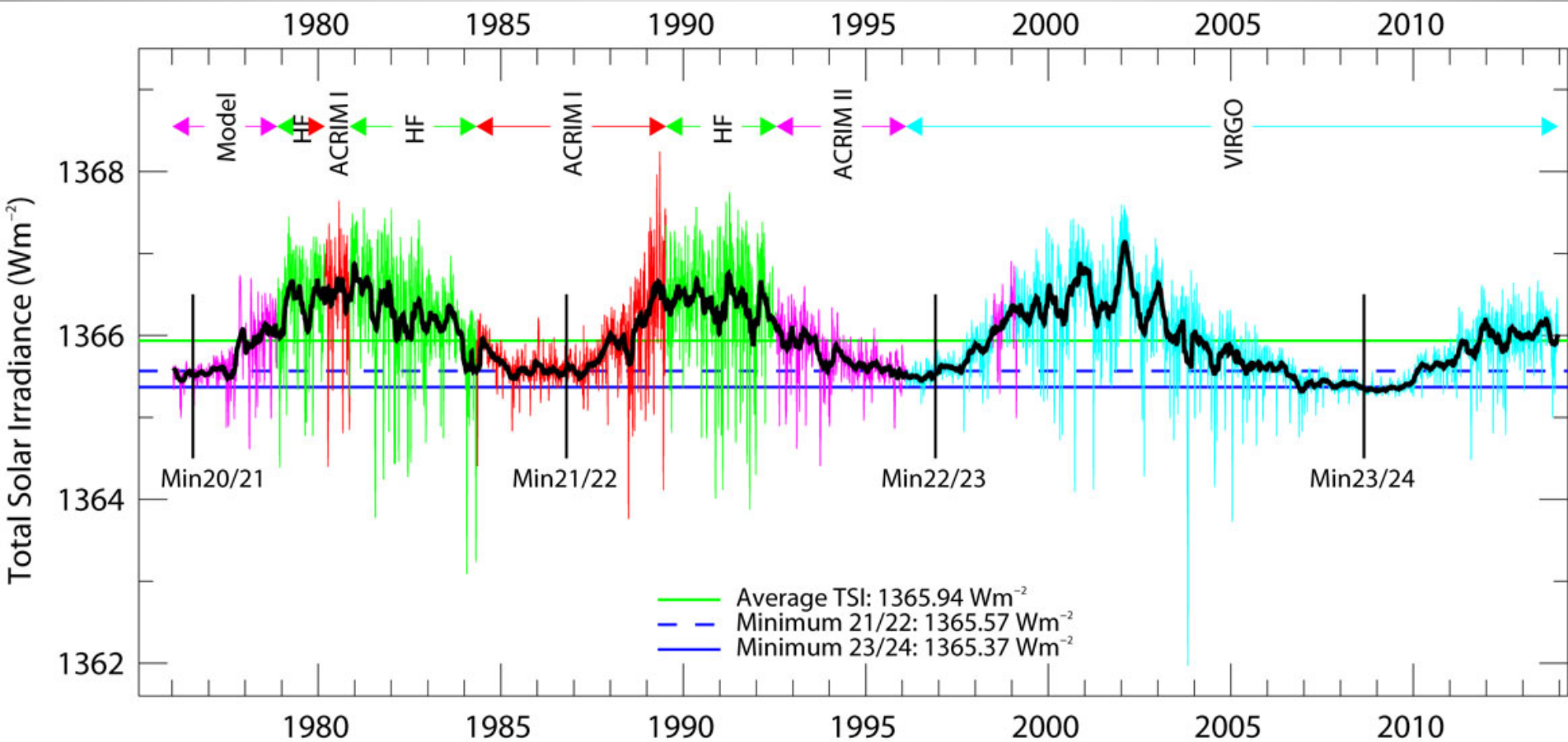
- ACRIM 2 data are shifted to the new scale of ACRIM 3 and with a taper over the blue period in b) merged together. (in b) ppm ec means ppm/dec)
- The difference between the last two minima of VIRGO is similar to the one of the combined ACRIM-TIM data, but much smaller than the one from ACRIM only

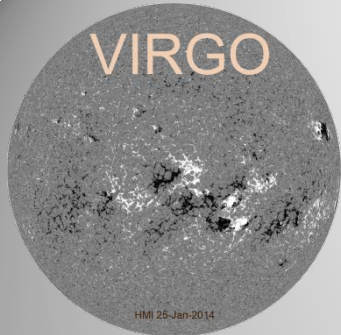




PMOD Composite with the new VIRGO Data 6.4

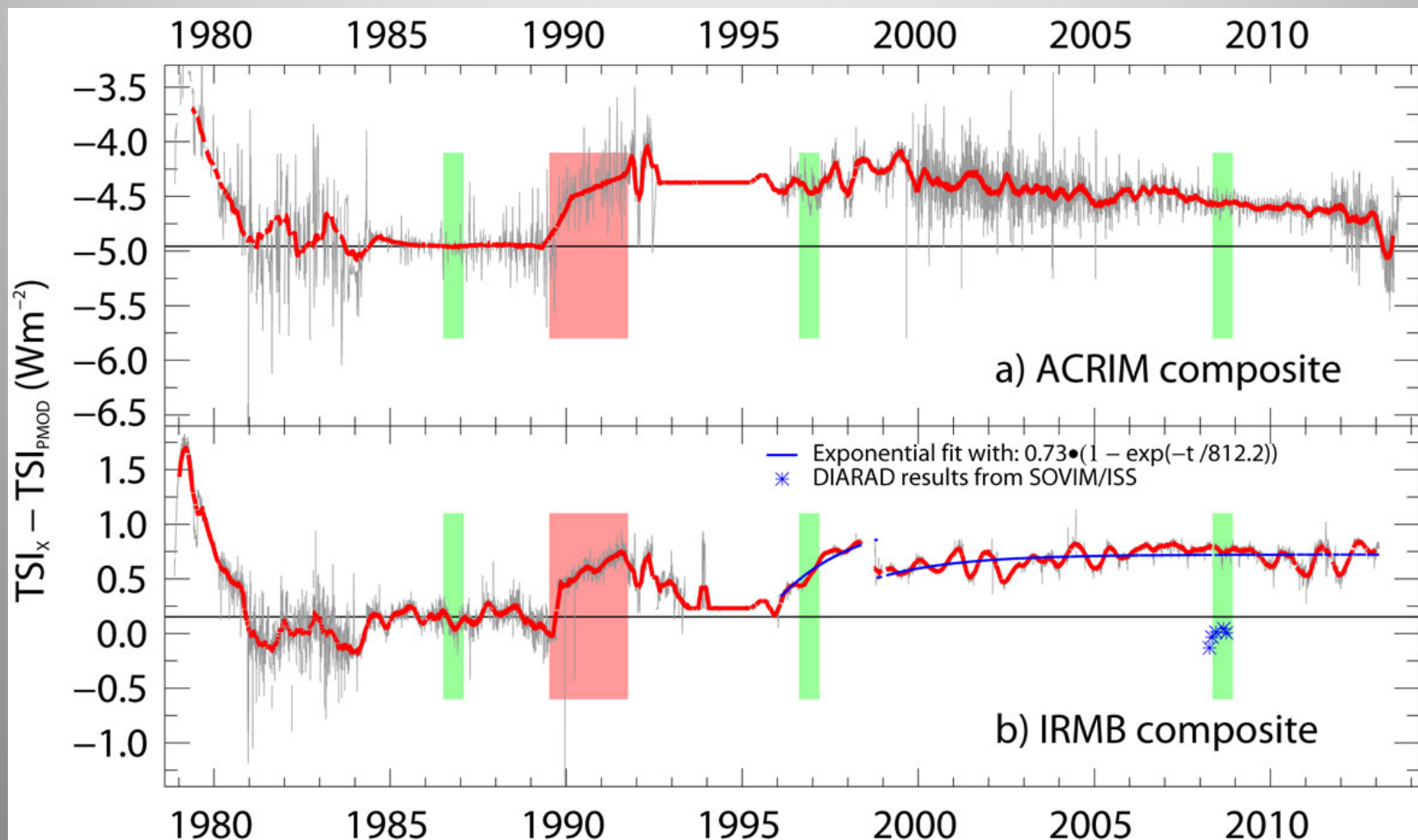
The time of the minima is determined from the rapid increase of the latitude of sunspots with PSI data. It looks as the minima are not necessarily at the minima of TSI

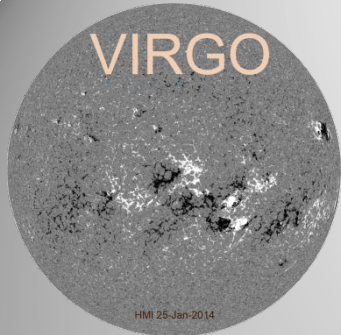




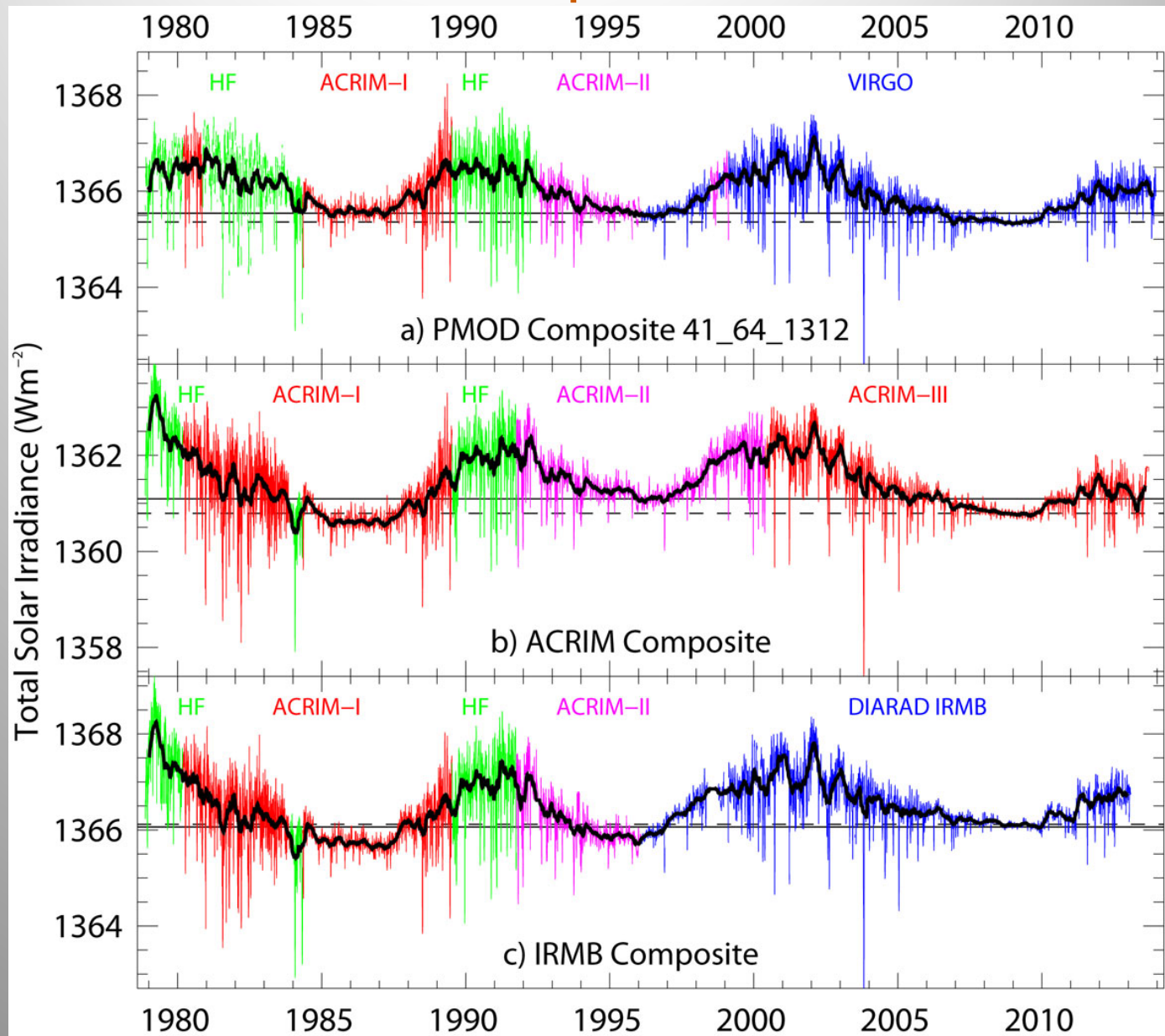
Comparison of ACRIM and IRMB composites with PMOD

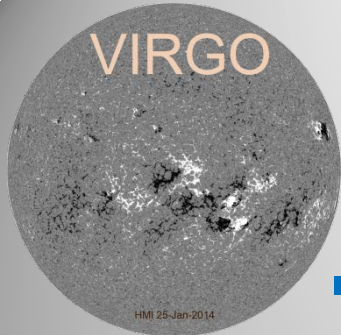
- Note the exponential fit to the difference of IRMB and PMOD composites and the values from SOVIM on ISS, confirming that DIARAD needs to be corrected for this the exponential change





The three Composites





Conclusions

- The PMOD Composite is only changed during the period of VIRGO, that is by adding version 6.4.
- The change between the last 2 minima has changed from 168 ppm to 124 ppm.
- The uncertainty now is less and amounts to 50 ppm as absolute sums or 35 ppm as rms sums.
- The change is now more significant, but smaller than before and the difference in slope to TIM of 13.1 ± 0.2 ppm/a is still an issue and needs to be evaluated and understood in more detail.
- The smaller change over the minima obviously influences the proxy models – on both short- and long-term scales