

Ground-Based Perspectives of Solar-B Science and Operations



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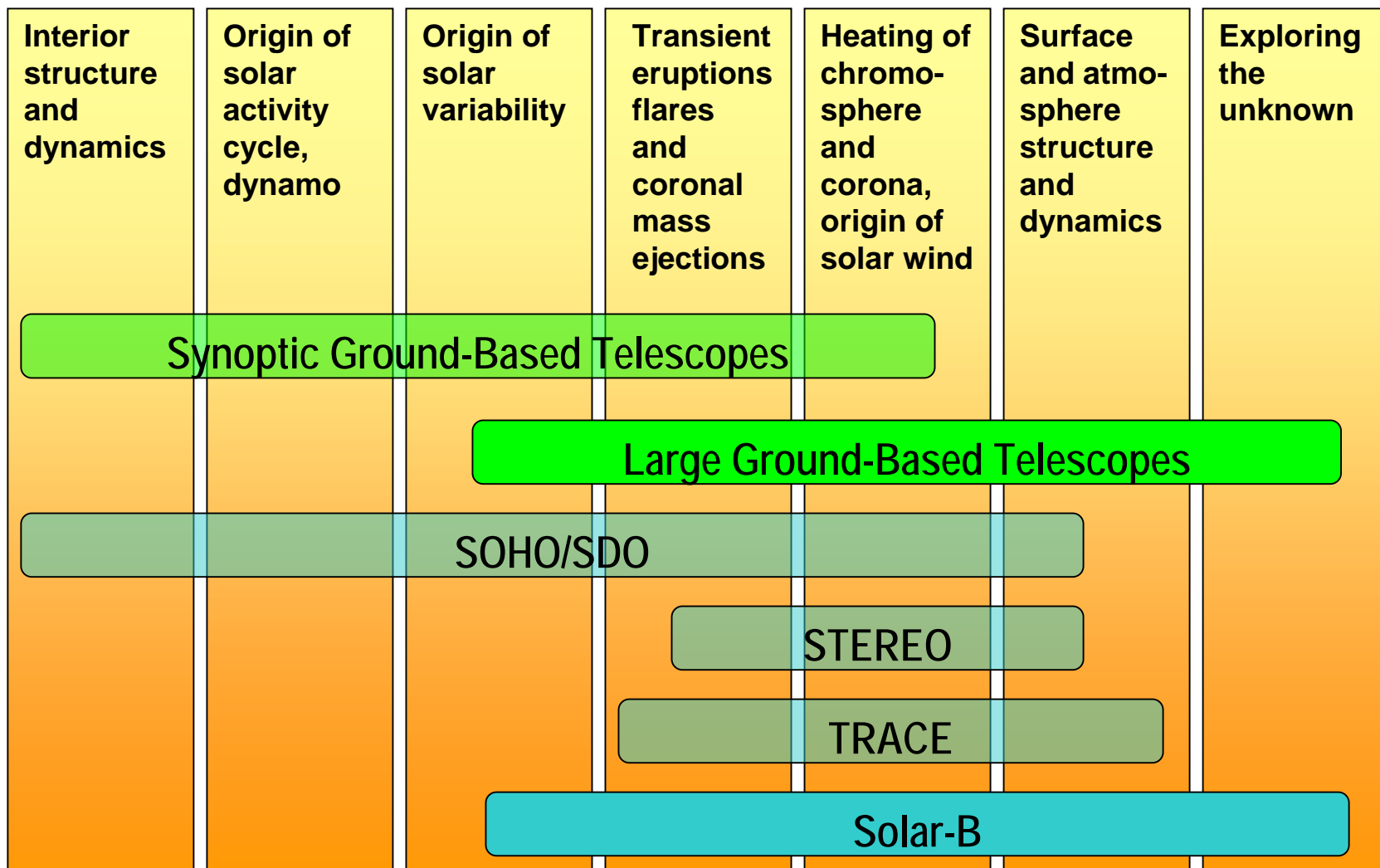


The Short Version of the Talk

- Solar-B is extremely exciting!
- When Solar-B becomes operational, my expectations will have been more than fulfilled!
- Thanks for involving us!

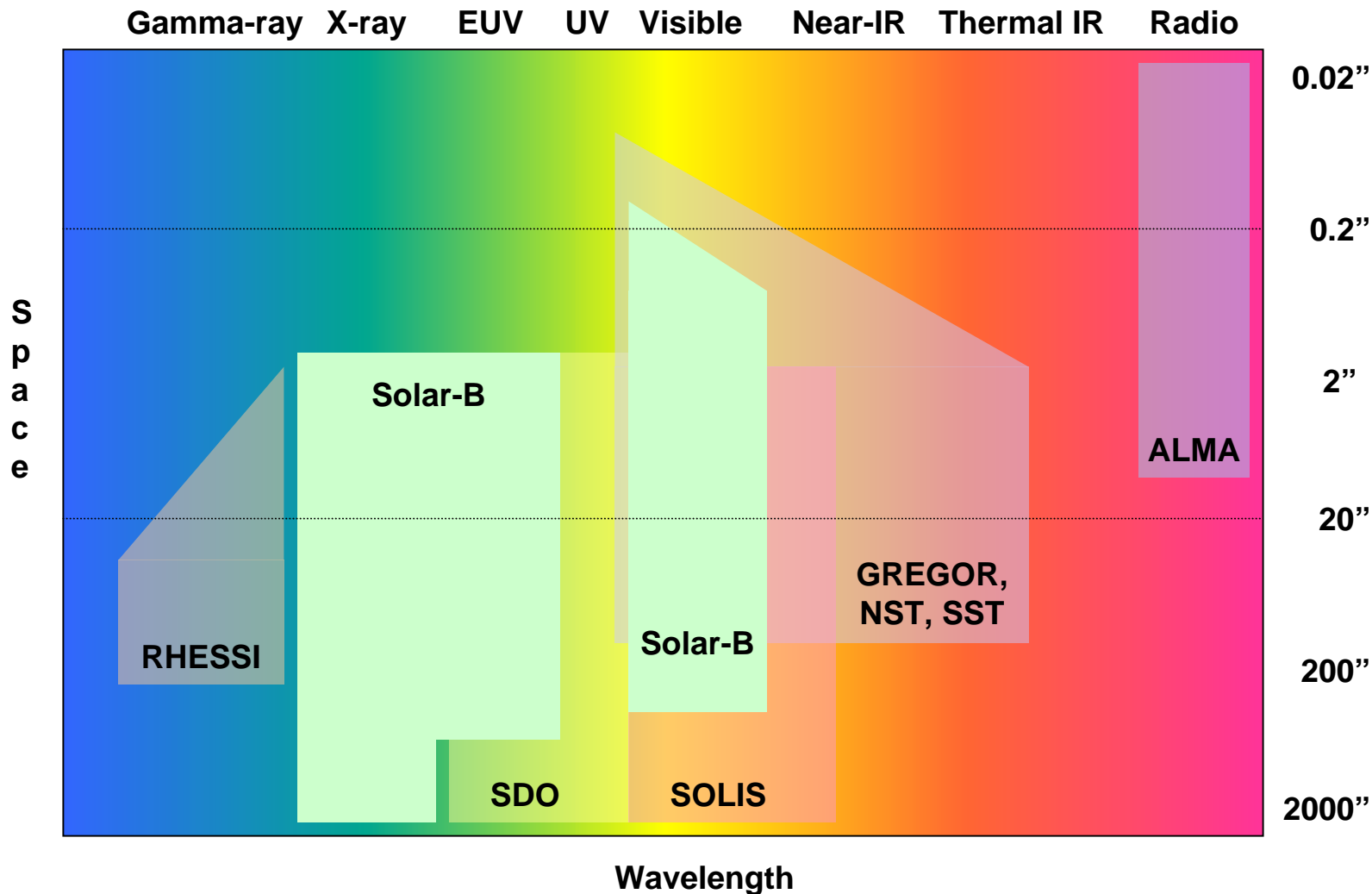


SOT = medium-sized ground-based telescope in space





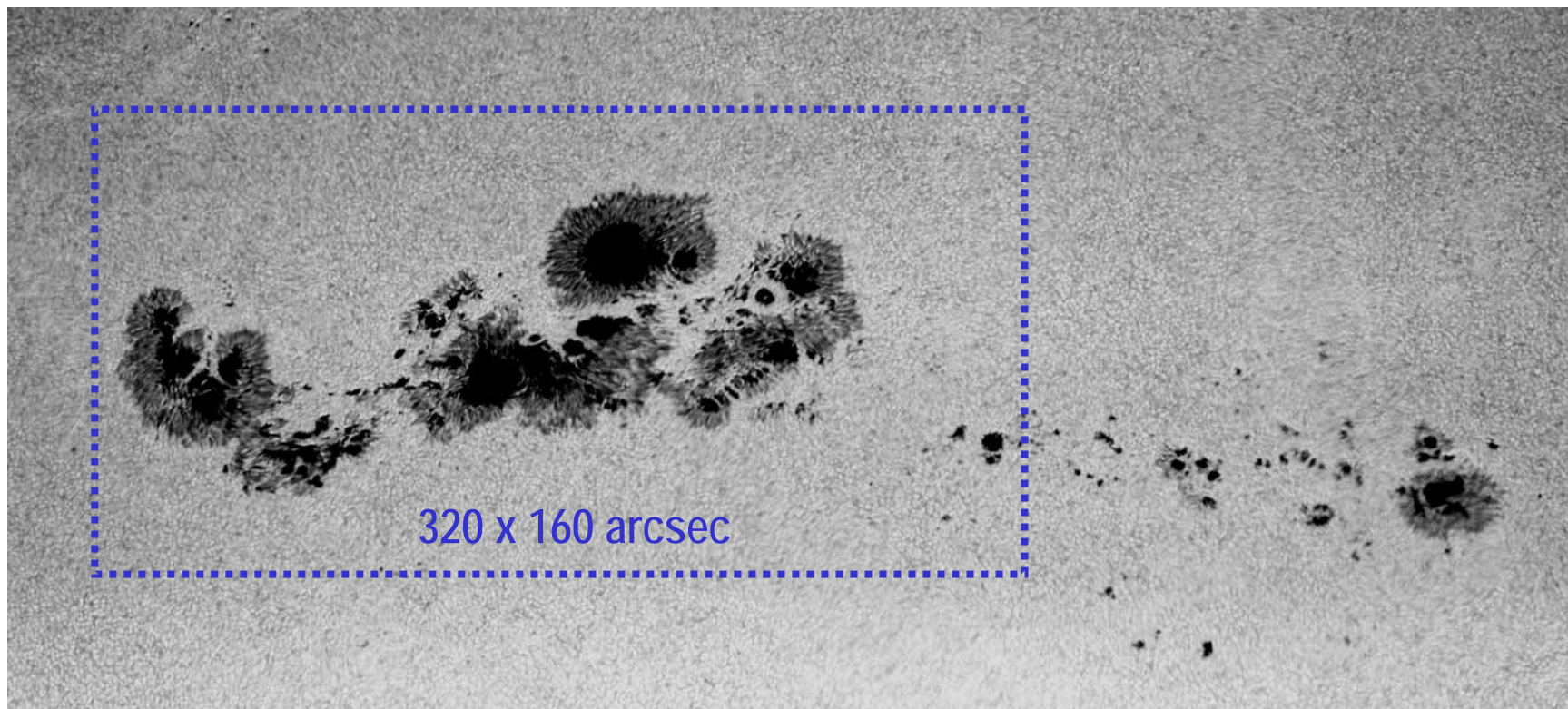
Spatial Resolution/Field-of-View vs Wavelength Coverage





SOT has a large field of view with high resolution

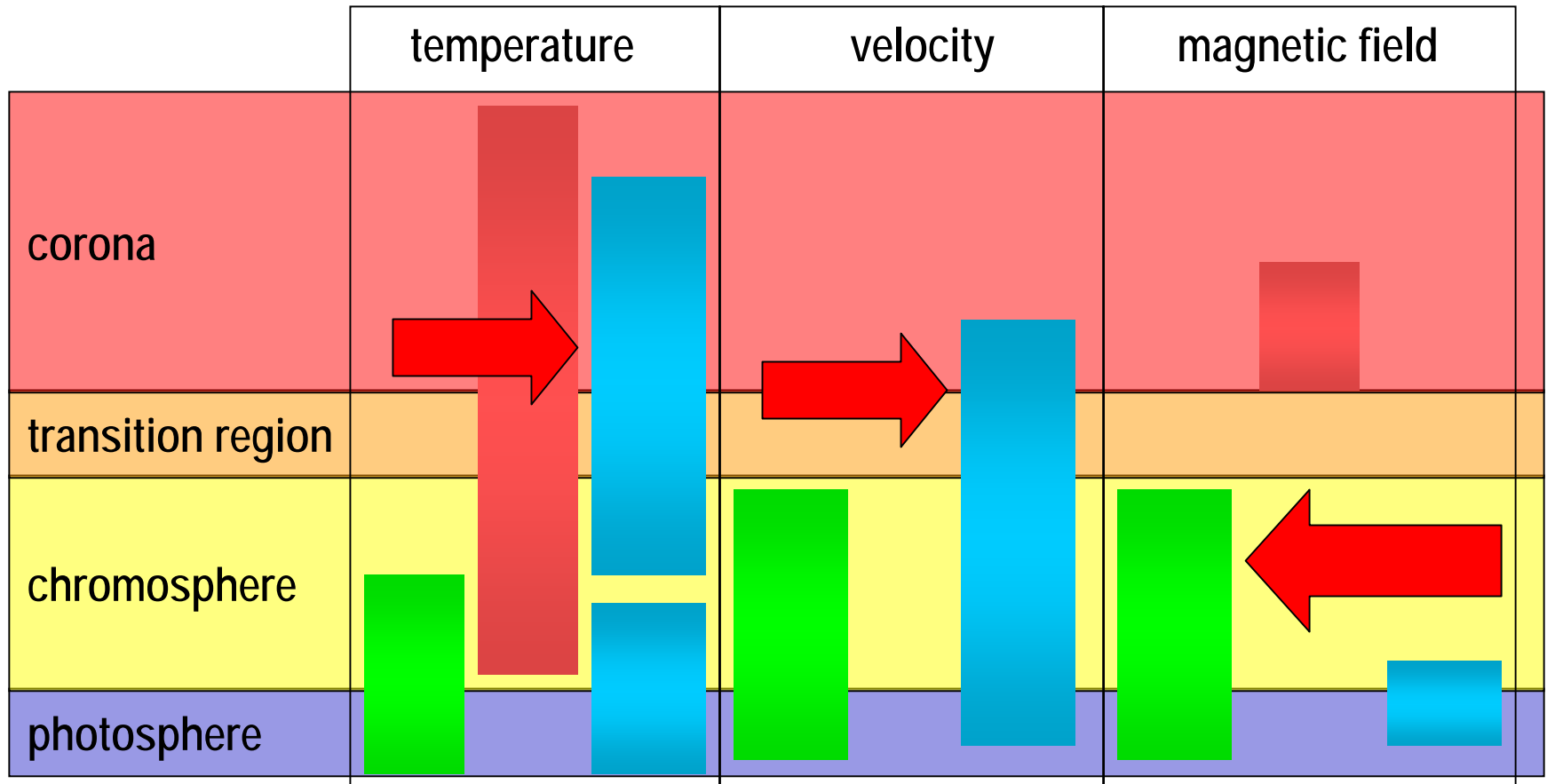
Solar-B will provide context images for the highest-resolution ground-based observations.



March 30, 2001, W.C.Livingston



On-Disk Coverage of Solar Atmosphere



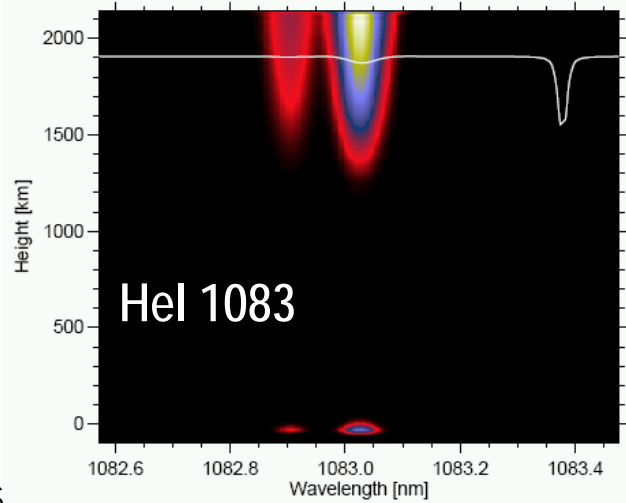
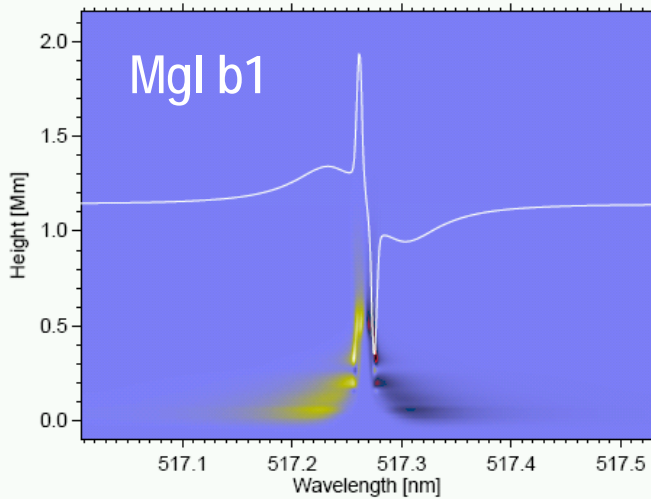
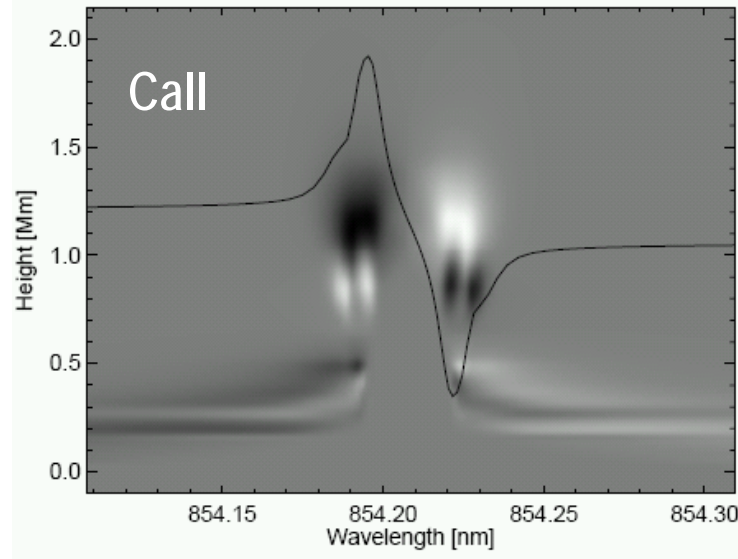
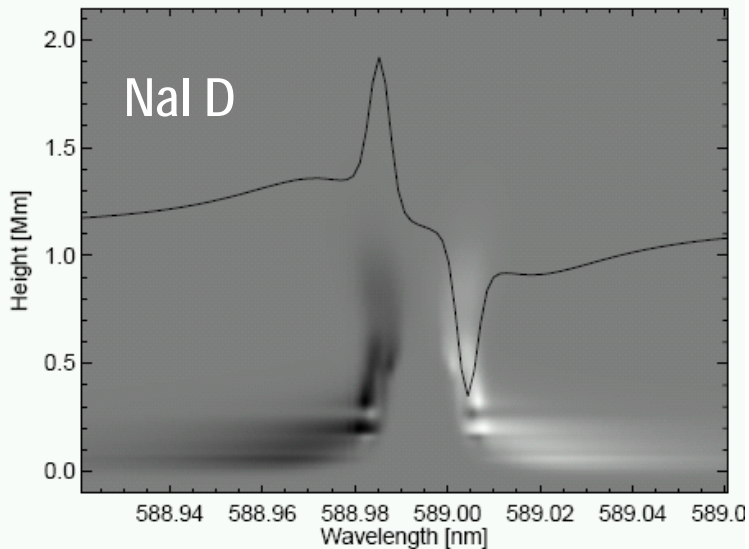
Ground-Based Optical

Ground-Based Radio

Solar-B



Formation Heights (courtesy Han Uitenbroek)





- Think of Solar-B and ground-based telescopes as an ***observing system***
- Select the ***combination of instruments*** in space and on the ground with the appropriate ***data analysis*** methods that have the highest likelihood of answering the scientific question
- Ground-based telescopes and Solar-B can have interchanging roles of supporting each other in terms of spatial coverage, temporal coverage, height coverage, and coverage of physical parameters
- Add ***numerical simulations*** to complement observing system



- Solar-B launch around solar minimum, ***think quiet sun***
- But, some ‘theoretical active regions’ (simple configurations)
- Magnetic field and temperature/density structures from the photosphere to the corona (canopies in quiet sun?)
- Magnetic field buffeting in photosphere (upward-traveling MHD waves?)
- Magnetic flux and field-strength evolution in the quiet sun (active-region leftovers, local dynamo?)



- Need to schedule the observing system
- Agile scheduling that considers solar conditions
- Ground-based 'research' telescopes are much less flexible than SOHO, TRACE, Solar-B
- Change to ground-based scheduling
 - provide specific time for Solar-B collaboration
 - schedule it together with Solar-B scheduling and other ground-based facilities
 - accept proposals for these time slots together with Solar-B scheduling