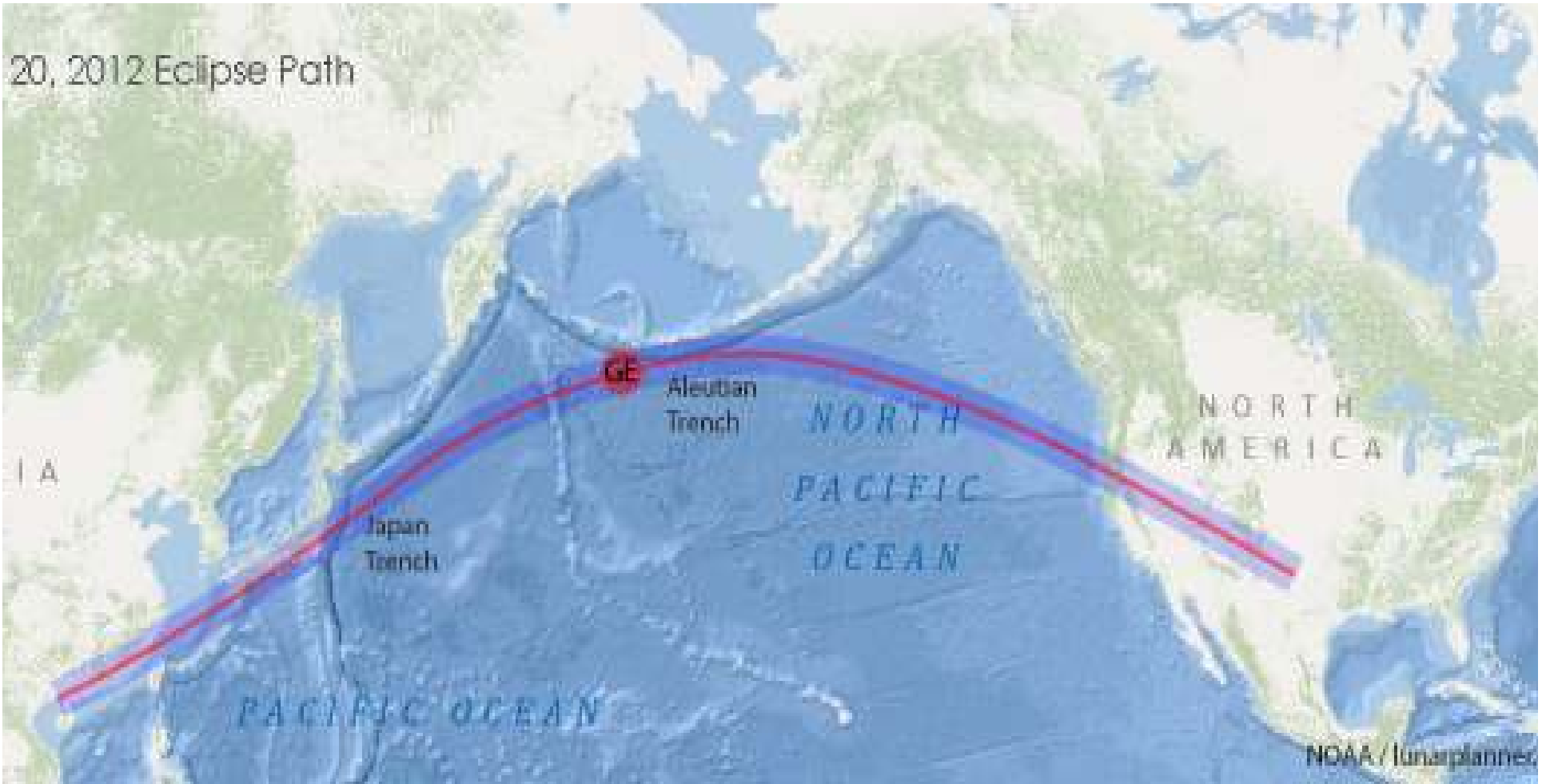




May 20, 2012 Annular Eclipse
USA Summary

Richard Nugent
30th IOTA Annual Meeting
Las Vegas, NV
October 19, 2012

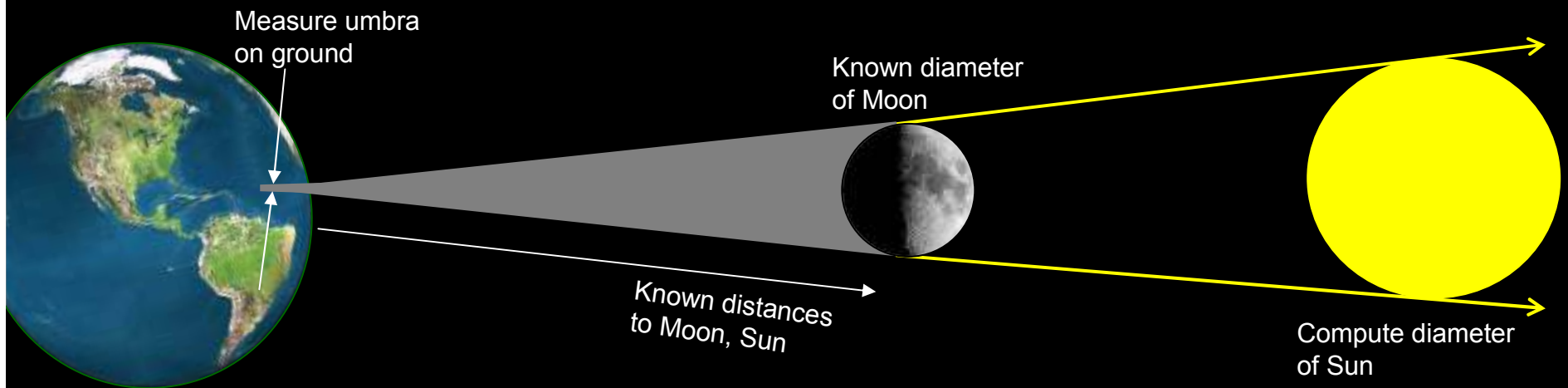
20, 2012 Eclipse Path



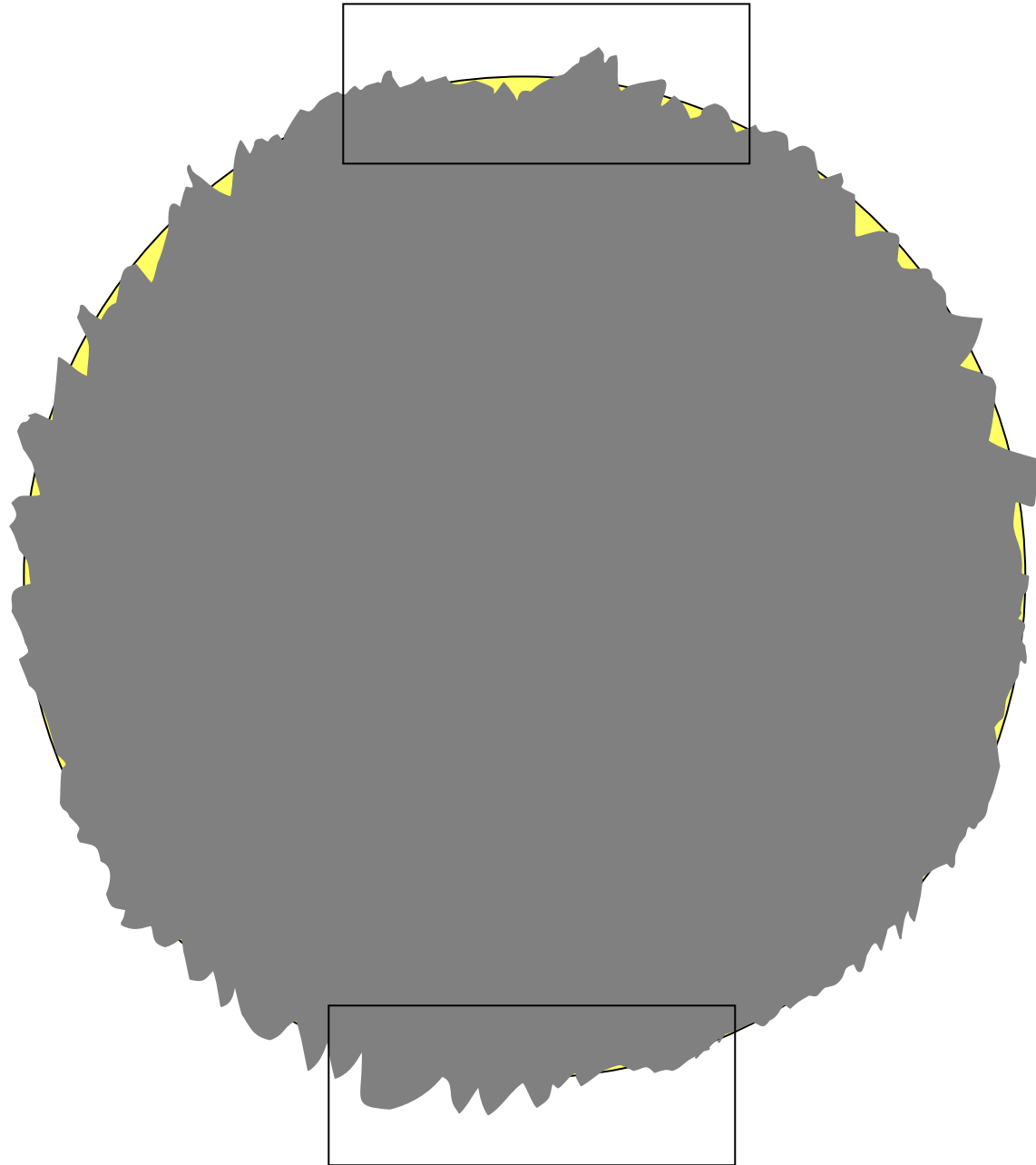
Primary goals for this eclipse

- Continuation for IOTA's long term solar radius measurement research
- Standardization of video equipment
- Standardization of solar filters
- First use of narrow band filters
- Results: calibrate with Picard satellite data

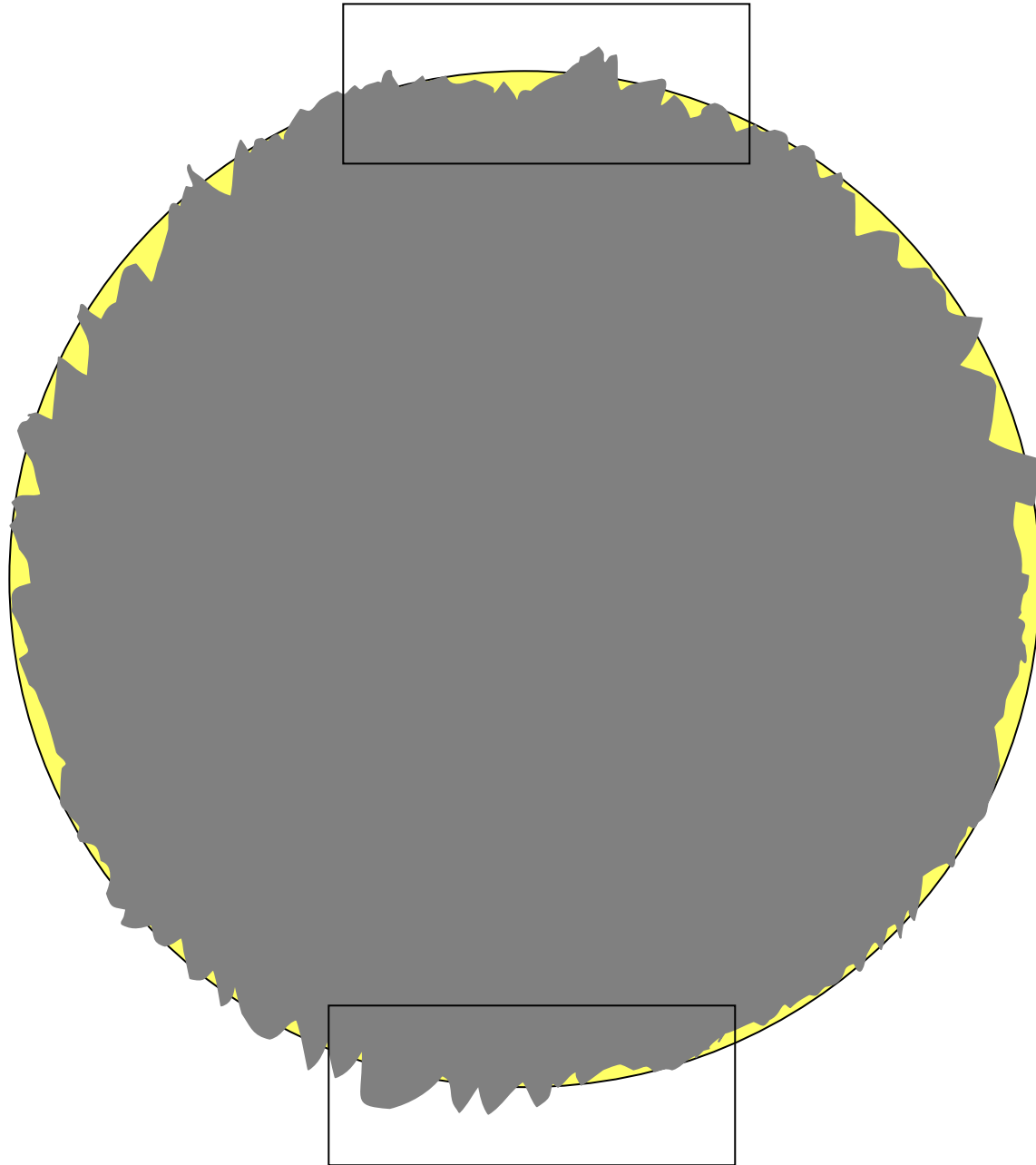
IOTA's Method for Solar Radius Calculation



Use Baily's
Beads to
determine
diameter
changes



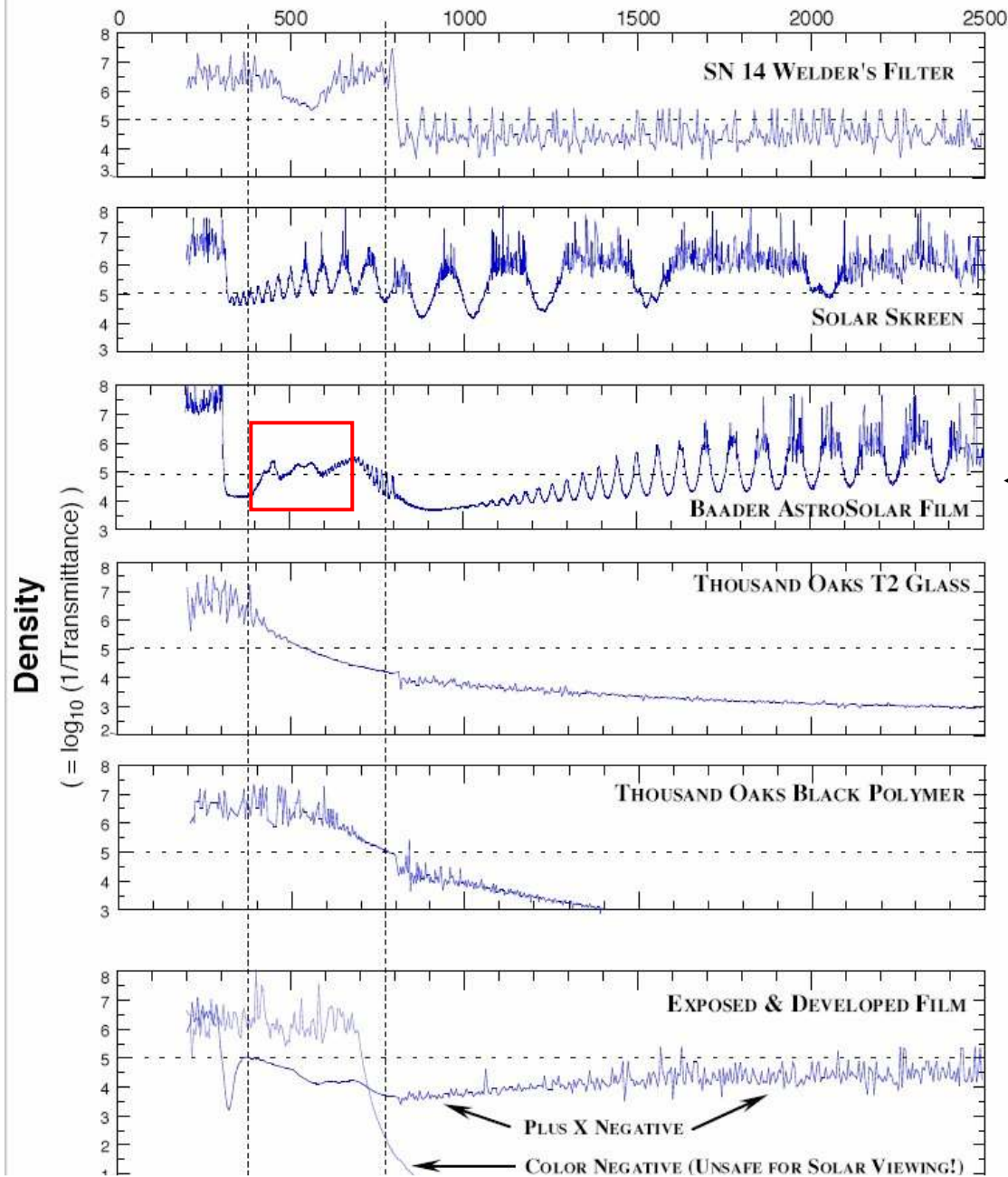
Use Baily's
Beads to
determine
diameter
changes



Equipment Specifications

- Telescope aperture: 75mm – 100mm
- Field of View – 15' - 20'
- Solar filter – Baader brand – in sheets
- Narrow band filters – Wratten #23, #56
- Video camera: PC164C(EX-2), Watec 902H

FIGURE 23: SPECTRAL RESPONSE OF SOME COMMONLY AVAILABLE SOLAR FILTERS



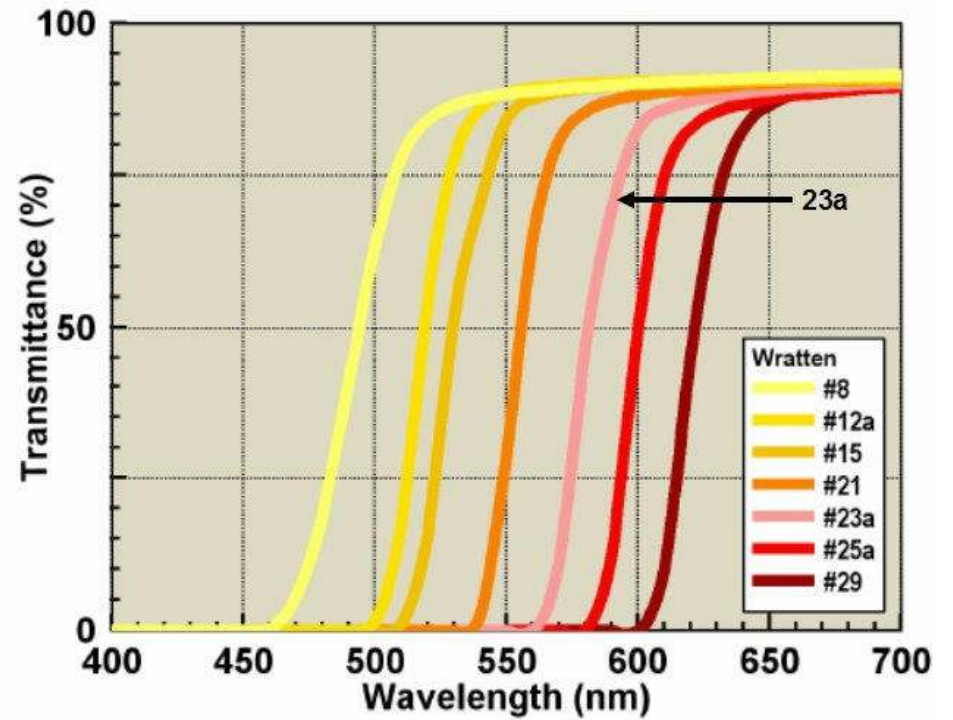
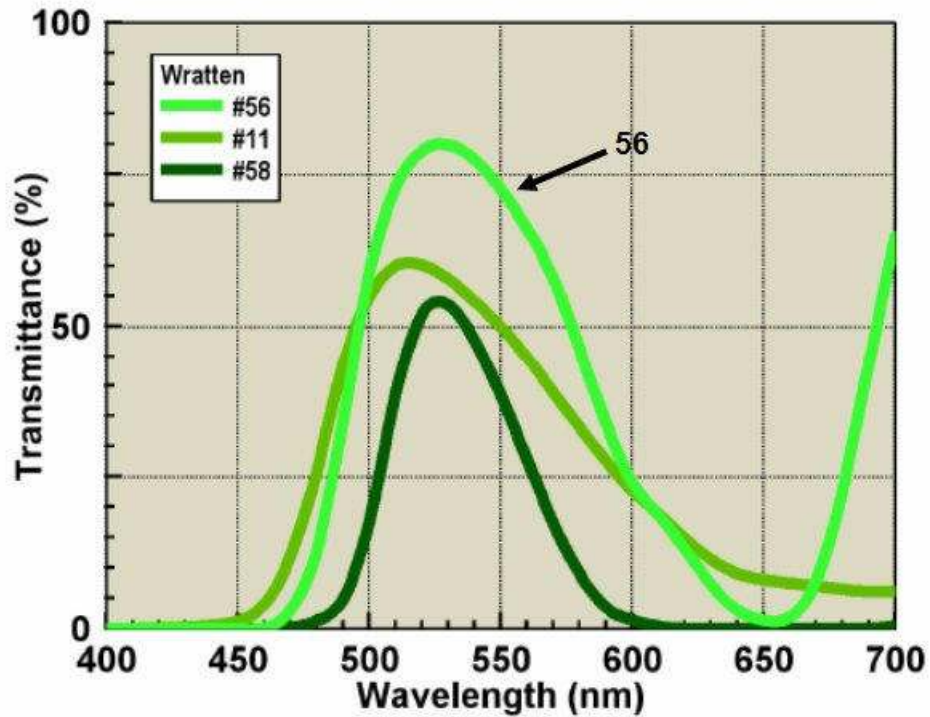
Baader filter
←

Baader filters acquired and distributed by Walt Morgan





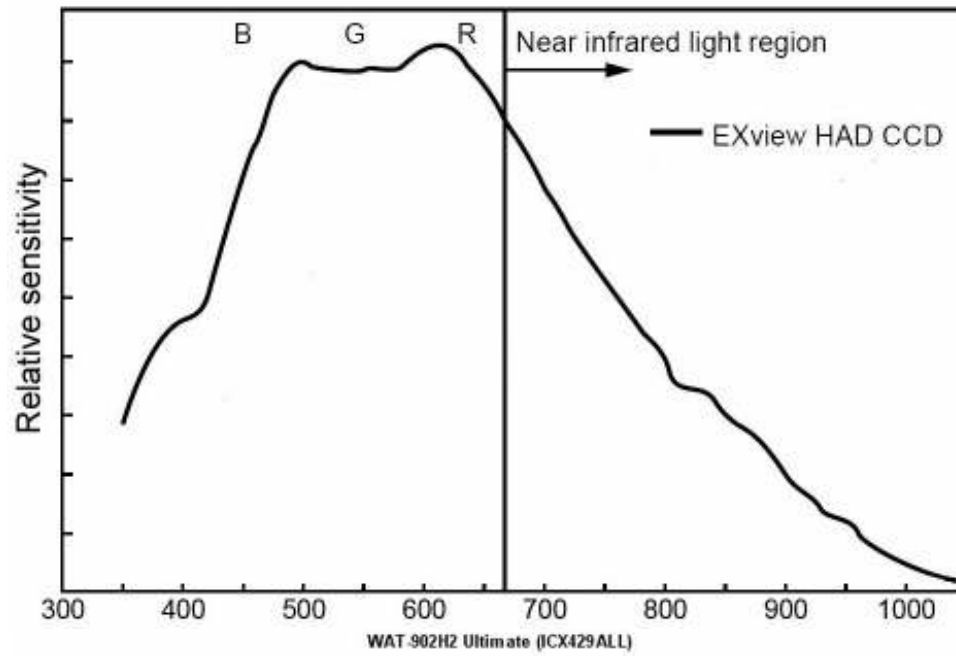
Narrow Band Filters



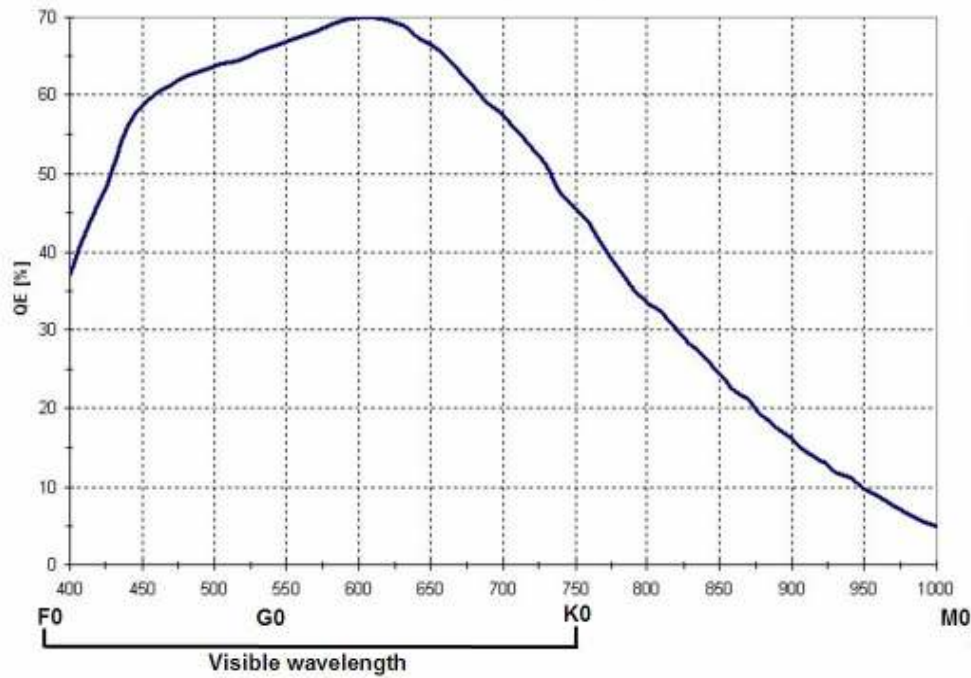
Picard satellite SODISM bands for diameter/shape measurements are: 535nm, 607nm, 782nm

Narrow Band filters
acquired and distributed
by Richard Nugent





PC-164CEx-2

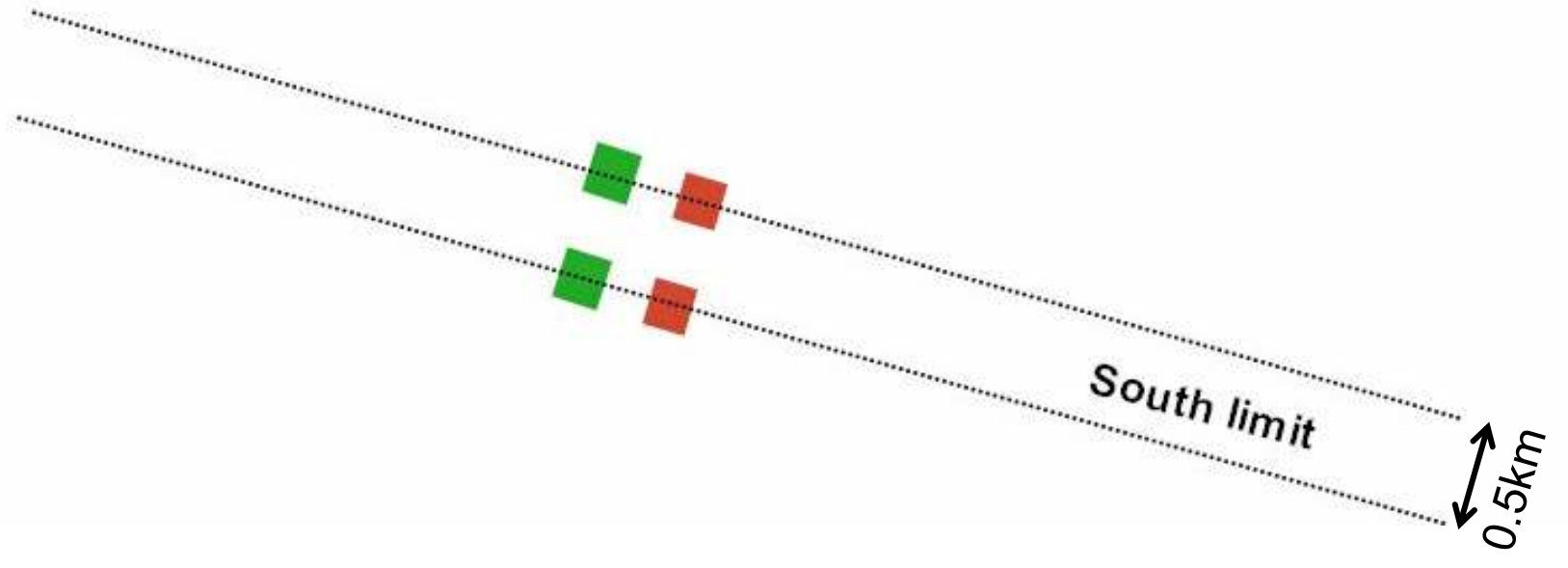
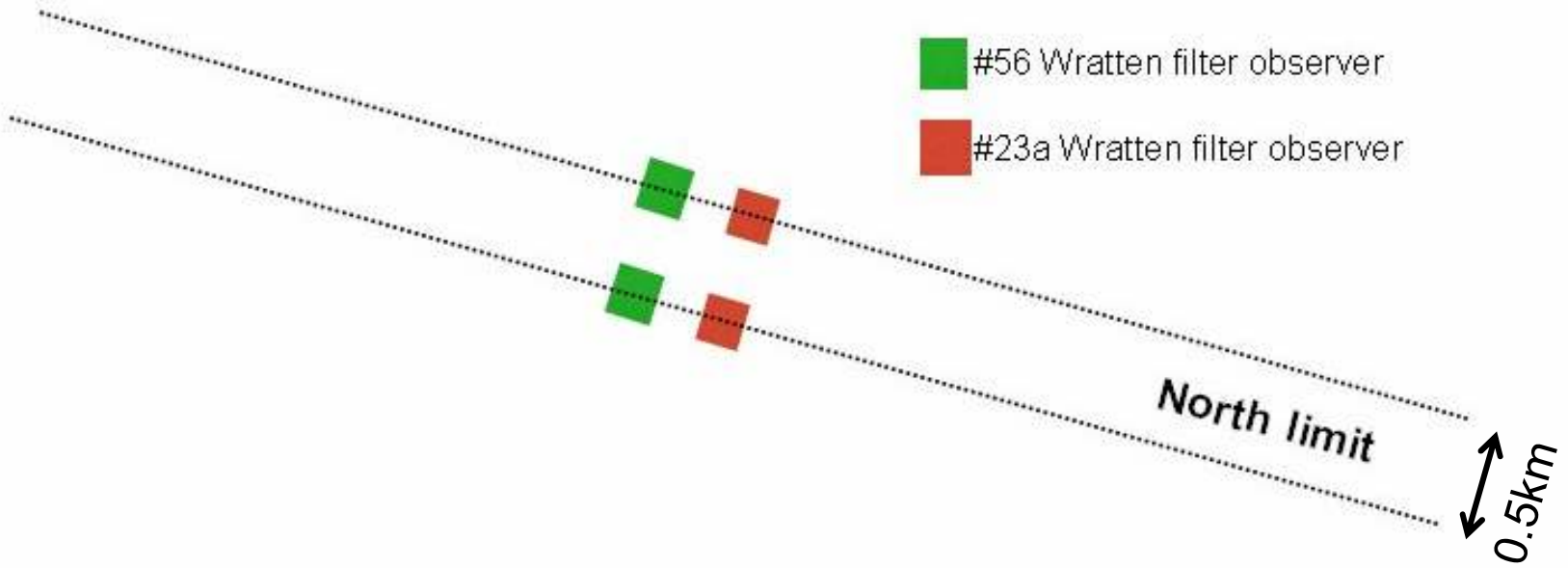


Watec 902H2

May 20, 2012 Eclipse Path



-  #56 Wratten filter observer
-  #23a Wratten filter observer



**NORTH LIMIT
OBSERVERS:**

Tony George

Steve Preston

David Dunham

Terry Redding

Lawrence Flemming

Ernie Iverson

**SOUTH LIMIT
OBSERVERS:**

Derek Breit

Sandy Bumgarner

Chuck Herold

Chris Kitting

Walt Morgan

Richard Nolthenius








Richard Nugent










Andreas Tegtmeier

Ted Swift

Roger Venable

north limit

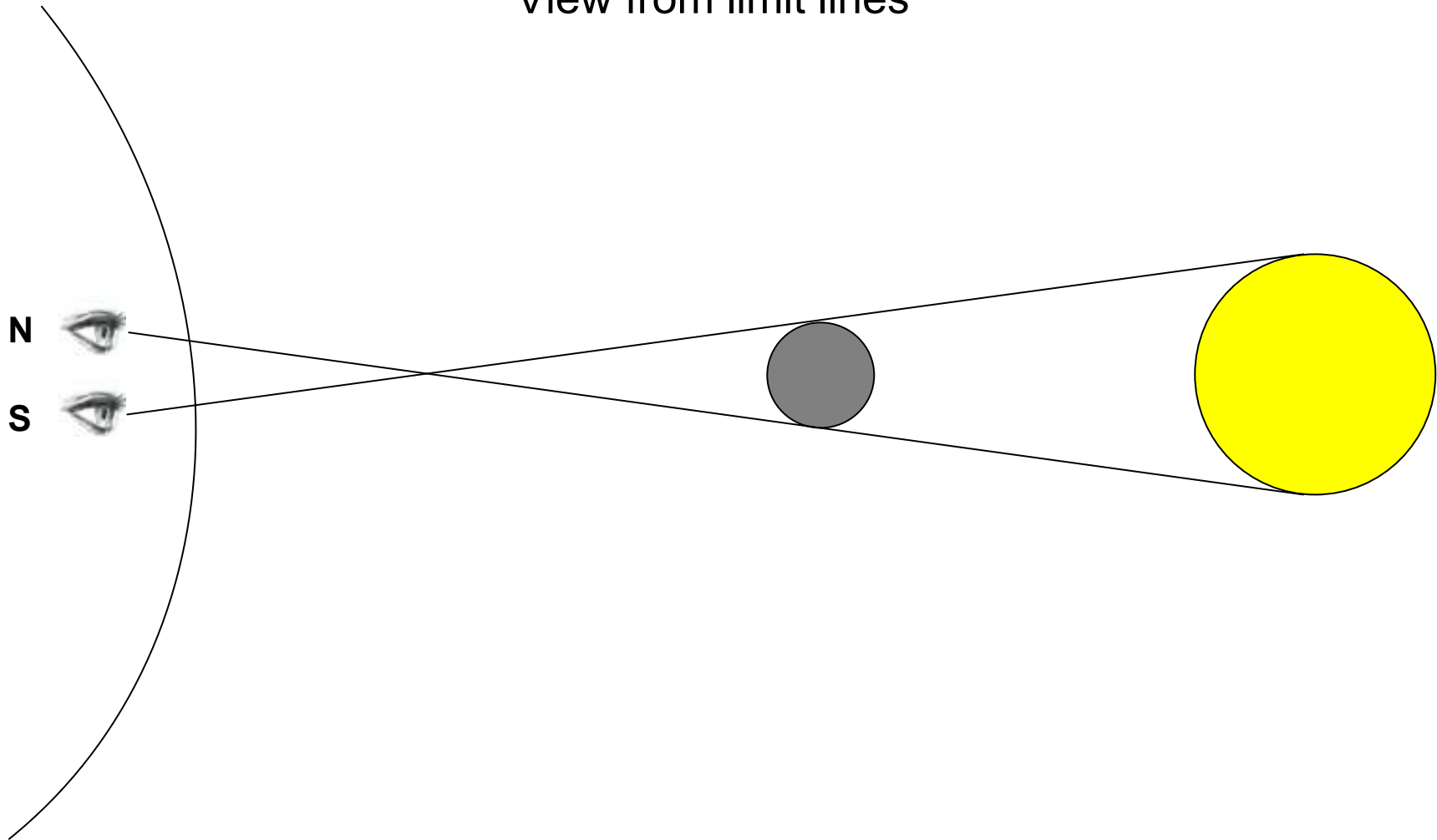
Tony G.   E. Iverson  Terry R.   Steve P.  David D. 

Walt M. 
Derek  Ted  R. Nolthenius  C. Kitting  R. Nugent 
Swift  C. Herold  Sandy B
C. Herold  Andreas Tegtmeier R. Venable

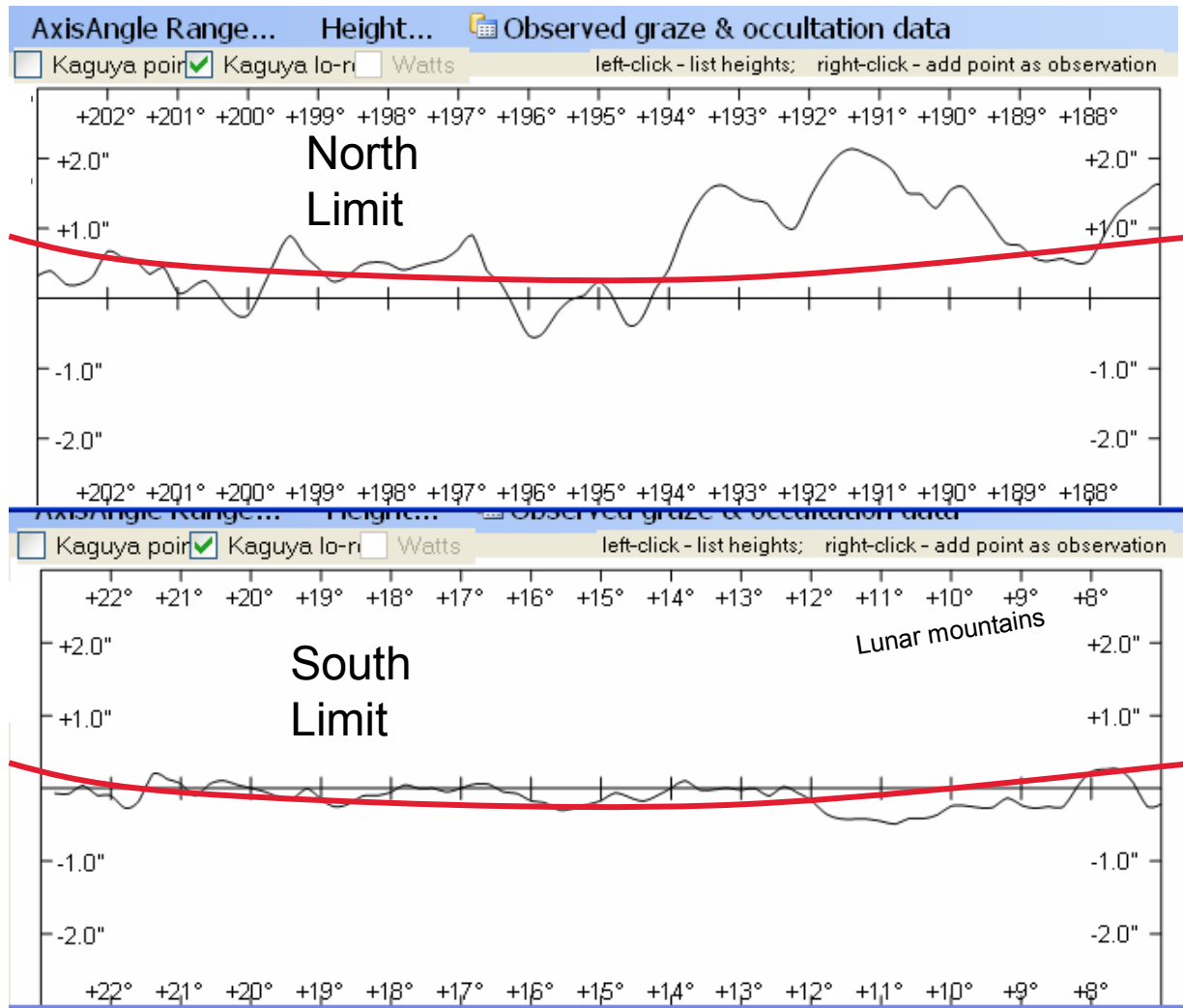
South limit

Annular eclipse geometry

View from limit lines



Kayguya Limb Profiles – North and South limits





Chuck Herold, Richard Nugent



Ted Swift, Chris Kitting, Richard Nolthenius, students



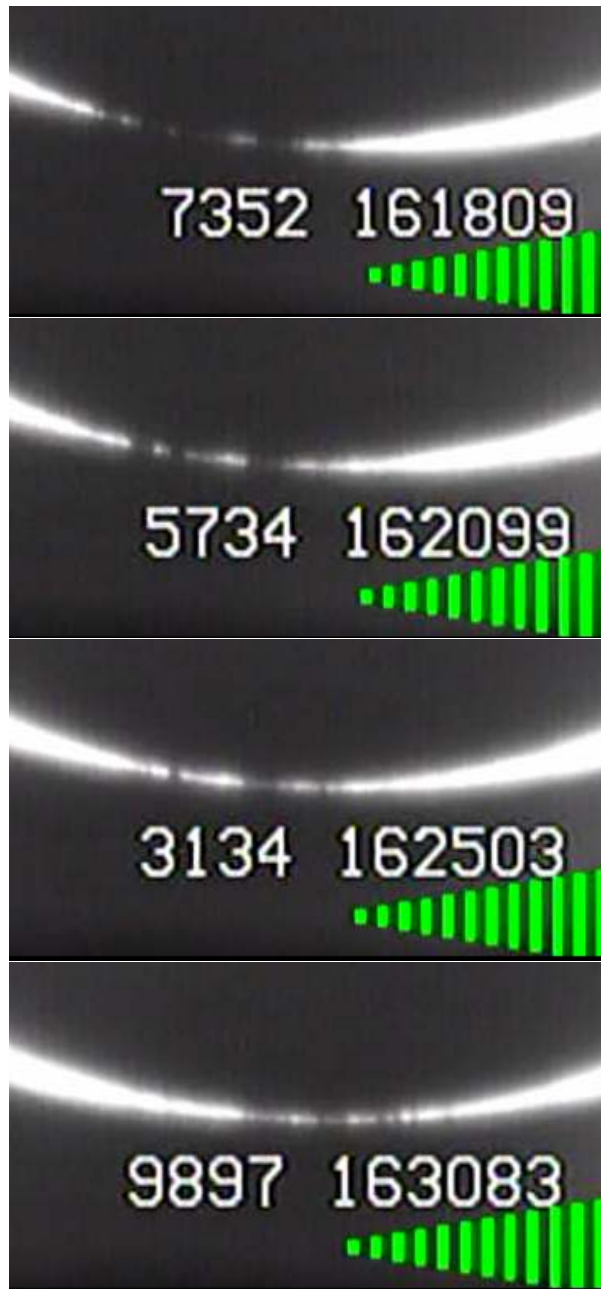
Andreas Tegtmeier, Germany



Ernie Iverson, Homeowners, Steve Preston, Tony George

Chuck Herold's last minute velcro attachment





Chris Kitting, S. limit ■

42 sec interval



Ted Swift, S. limit



15 sec interval



Terry Redding,
Lawrence Fleming, at
North limit



photos by Steve Preston and Tony George





2012 Annular Solar Eclipse Baily's Beads Observation: Lessons Learned

Site Location: Gardner Ranch, Alturas, CA

Observers: Tony George, OR, Terry Redding, FL, Butch Fleming, CA, Steve Preston, WA, Ernie Iverson, TX

Recap:

IOTA observers attempted to observe Baily's beads during the 2012 May 20 annular solar eclipse in an effort to acquire data to determine the solar diameter. Our group assembled near Alturas, CA, at sites selected for good Baily's beads along the north path limit.



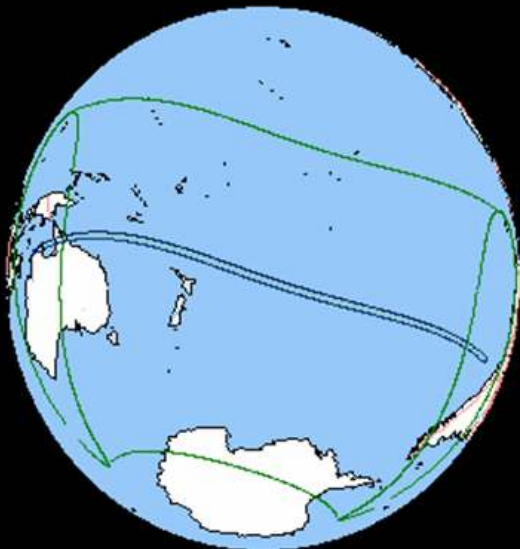
Our sites were spread out in approximate $\frac{1}{2}$ km increments to optimally cover the prime Baily's bead area as defined by Richard Nugent:



Generally we had good views of the eclipse prior to maximum annular eclipse and best Baily's beads as seen in the following composite image of partial phases taken by Tony George and Steve Preston:

Next Opportunities for Baily's beads Measurements

2012 Nov 13 total eclipse



2013 May 10 annular eclipse



2013 Nov 3 annular-total eclipse



2016 Mar 9 total eclipse



2016 Sep 1 annular eclipse



2017 Feb 26 annular eclipse



2017 Aug 21 total eclipse

