Central Oregon
Skyglow Measurement Network

Methods and
Results from July 2019 – March 2020

Addendum
Rimrock Ranch
Data from April – June, 2020

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IDA Oregon Chapter
June 24, 2020
Rimrock Ranch
Sky Quality Monitor Data

• SQM installed at Rimrock Ranch in Central Oregon by Jim Hammond of the Sisters Astronomy Club, Sisters, Oregon

• First two months of data: April 21 – June 23, 2020

• Analyzed the Rimrock Ranch data through the same workflow as the rest of the SQM sites in Central Oregon, as described in IDA Oregon Technical Report #2

• Analysis of the first two months of data shows that the Rimrock Ranch location has very dark skies –
  • The average “red trend” value is 21.79 magnitudes/arc second squared, and
  • The overall cloudy sky character shows that clouds appear dark, another indicator of minimal light pollution from the ground at that site

• These data are very encouraging and need to be considered in the context that
  • They represent a limited time period, and that
  • The data from the other SQM sites in Central Oregon in Technical Report #2 do not yet include data from this same time period – perhaps several of those sites also had equally dark skies during this period?
All SQM Sites – Central Oregon Skyglow Measurement Network
Summary of SQM Measurements from July 2019 – April 2020

Data Included in plot:
SQM measurements every 5 minutes, all night long, All nights
Moon below -10 degrees, Sun below -18 degrees

Magnitudes per Arc Second Squared

Awbrey Butte
Tetherow
Madras
Oregon Observatory
Sunriver
Black Butte Ranch
Prineville Reservoir State Park
Pine Mountain Observatory
Rimrock Ranch

Rimrock Ranch Added - Two months of data
All SQM Sites – Central Oregon Skyglow Measurement Network
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Moon below -10 degrees, Sun below -18 degrees
Density plot count of 8 or more per bin

Magnitudes per Arc Second Squared

AvgMsas vs. AvgMinSince3pm

Rimrock Ranch Added - Two months of data
**Summary of SQM Measurements from July 2019 – April 2020**

Data Included in plot:
- SQM measurements every 5 minutes, all night long, All nights
- Moon below -10 degrees, Sun below -18 degrees
- Density plot count of 8 or more per bin

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All SQM Sites – Central Oregon Skyglow Measurement Network
Summary of SQM Measurements from July 2019 – April 2020

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SQM measurements every 5 minutes, all night long, All nights
Moon below -10 degrees, Sun below -18 degrees
Density plot count of 8 or more per bin

Summary Statistics for the Box Plot data of the previous slide

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Rimrock Ranch Added - Two months of data