



# SESI Presentation: SEA5

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Daniel Jiang  
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# Who Am I?

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Daniel Jiang

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B.A. Computer Science (expected 2019),  
University of California Berkeley



# What is SEA5?

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- Space Environment Automated Alert & Anomaly Analysis Assistant (SEA<sup>5</sup>)
- Provide past, present, and predicted space environment information for specific missions, orbits, and user-specified locations throughout the heliosphere, geospace, and on the ground

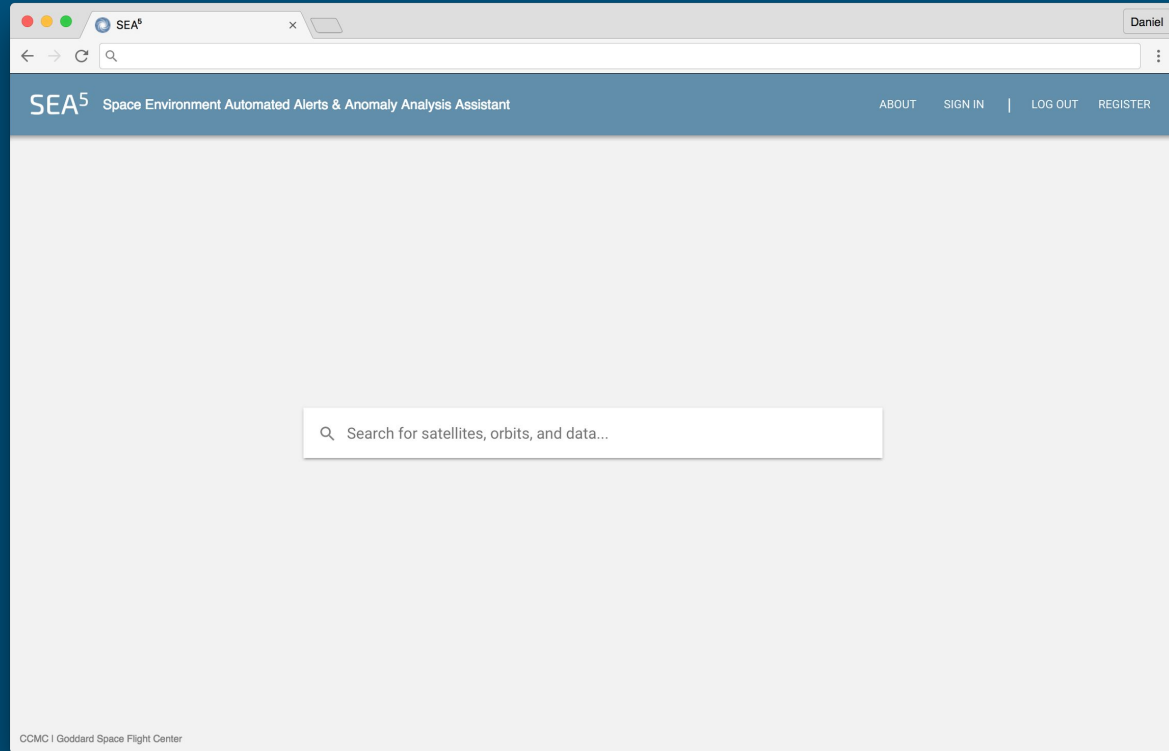
# What Have I Been Working On?

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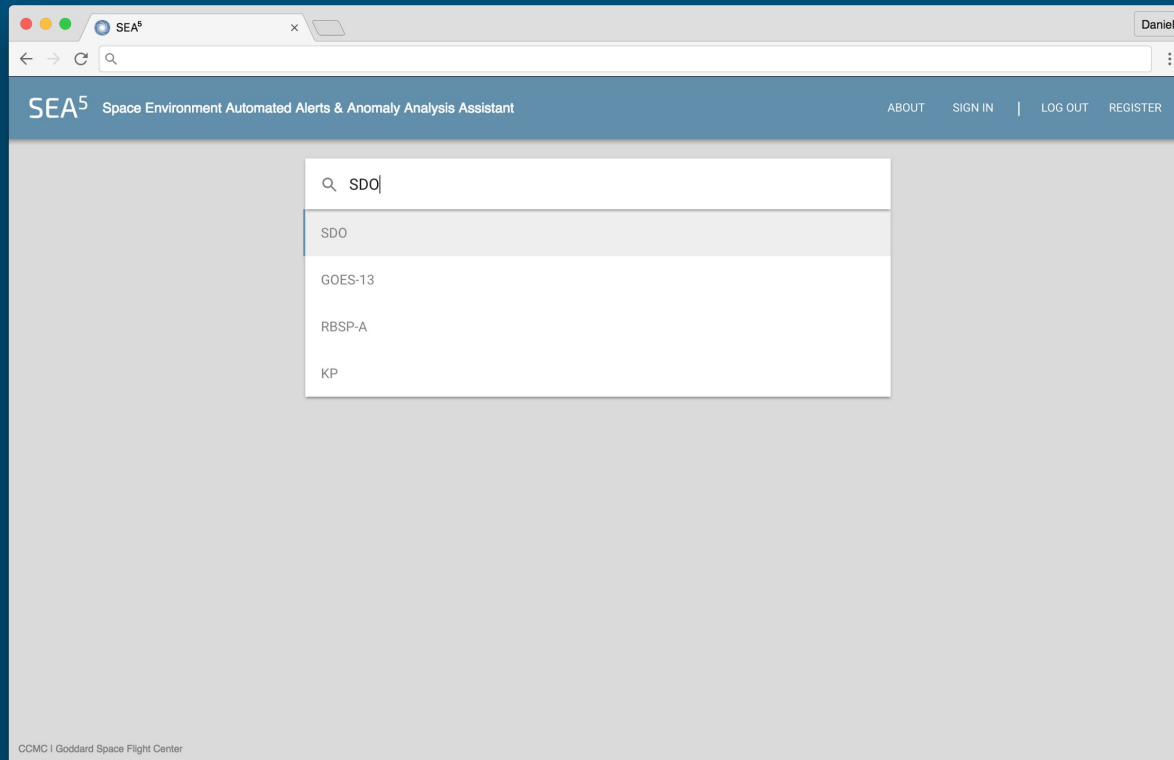
- Updating Google Polymer (a JavaScript library) from v0.5 to v1.5
- Validating and correcting hazard quotient calculations w/ Alex, Yihua, and Justin
- Working w/ Tyler and Justin to link SEA5 and Oort Cloud
- Updating the charting library to Plotly.js
  - Creating new 3D visualization features
- Improving the UI

# The State of SEA5

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# The State of SEA5

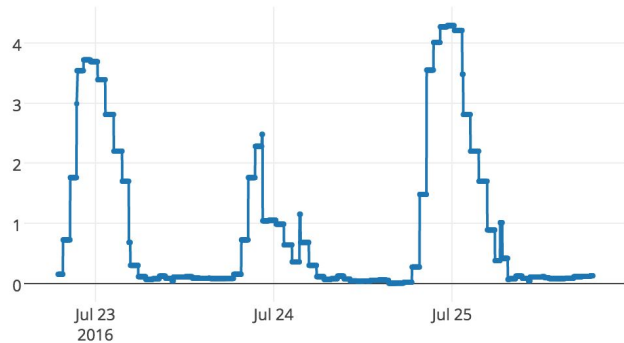


# The State of SEA5

The screenshot displays the SEA5 web application interface. At the top, the browser tab is labeled 'SEA5' and the user's name 'Daniel' is visible in the top right corner. The page header includes the SEA5 logo and the full name 'Space Environment Automated Alerts & Anomaly Analysis Assistant', along with navigation links for 'ABOUT', 'SIGN IN', 'LOG OUT', and 'REGISTER'. The main content area features a search bar with 'SDO' entered. Below the search bar, there are tabs for 'All', 'Info', 'Charts', 'Images', and 'Orbits'. The 'Info' tab is selected, showing a clock icon and the time '16:30:00 UTC'. Below this, there are fields for 'Start Date & Time' (2016/07/25 00:00:00) and 'End Date & Time' (2016/07/25 23:59:59), with a blue 'CONFIRM' button underneath. The 'SDO Orbit' section is active, displaying a 3D plot of the satellite's orbit around Earth. The plot includes a legend with 'Orbit' (black line), 'Latest Pos' (orange dot), 'Continents' (green line), and 'Rivers' (blue line). The axes are labeled with values from -10k to 5k. A '2D' button is located in the top right of the plot area. The footer of the page reads 'CCMC | Goddard Space Flight Center'.

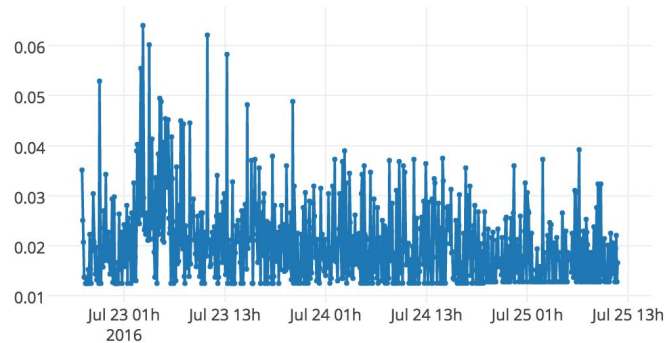
### SDO Surface Charging

Add Threshold ?



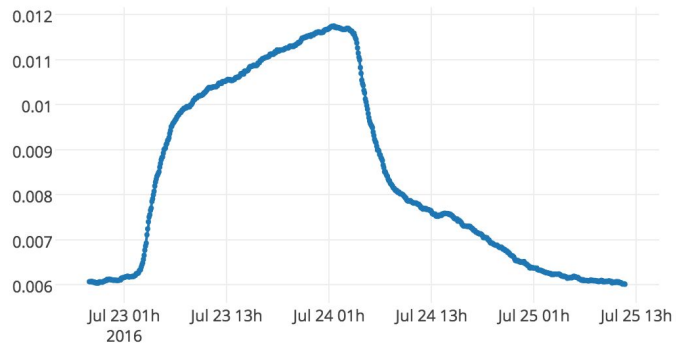
### SDO Single Event Effects

Add Threshold ?



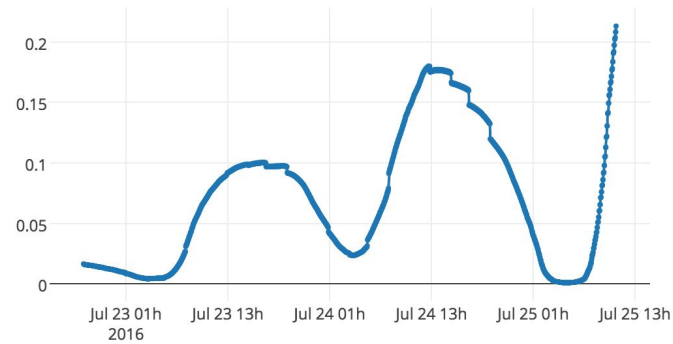
### SDO Total Dose

Add Threshold ?



### SDO Internal Charging

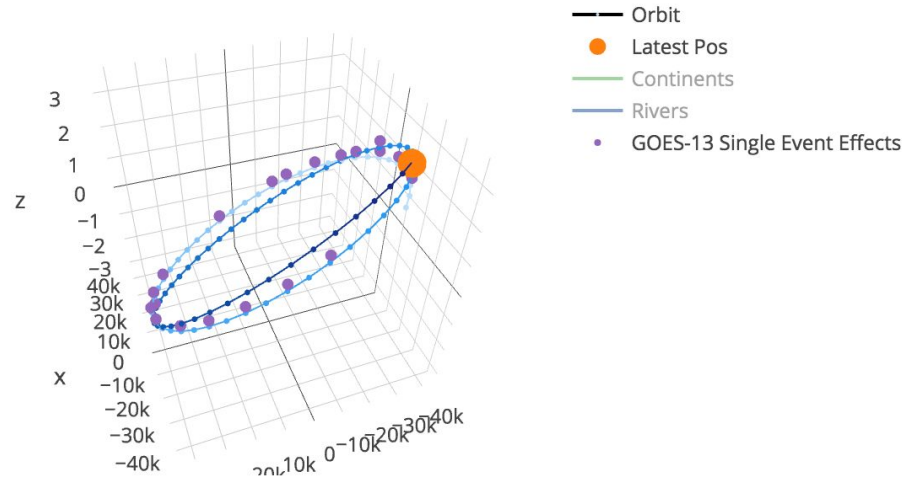
Add Threshold ?





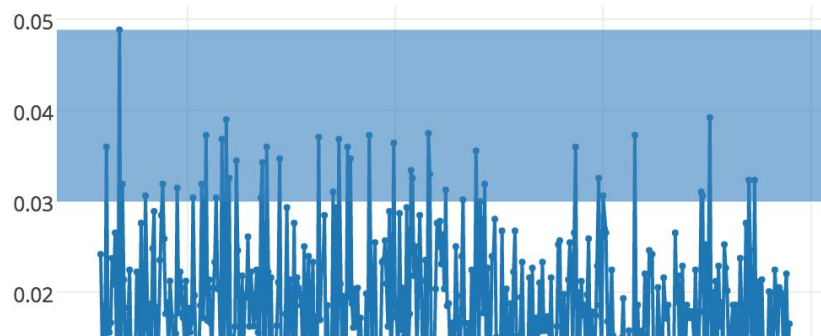
## GOES-13 Orbit

2D



## GOES-13 Single Event Effects

Add Threshold ?



# What's Next?

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## Next Milestone

- Link SEA5 and Oort Cloud
- Provide an initial catalog of geosynchronous satellites
- Cleanup UI
- Deploy SEA5

# What's Next?

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## Future Milestones

- Default thresholds and alerts
- Custom thresholds and alerts
- CME warnings
- Mars