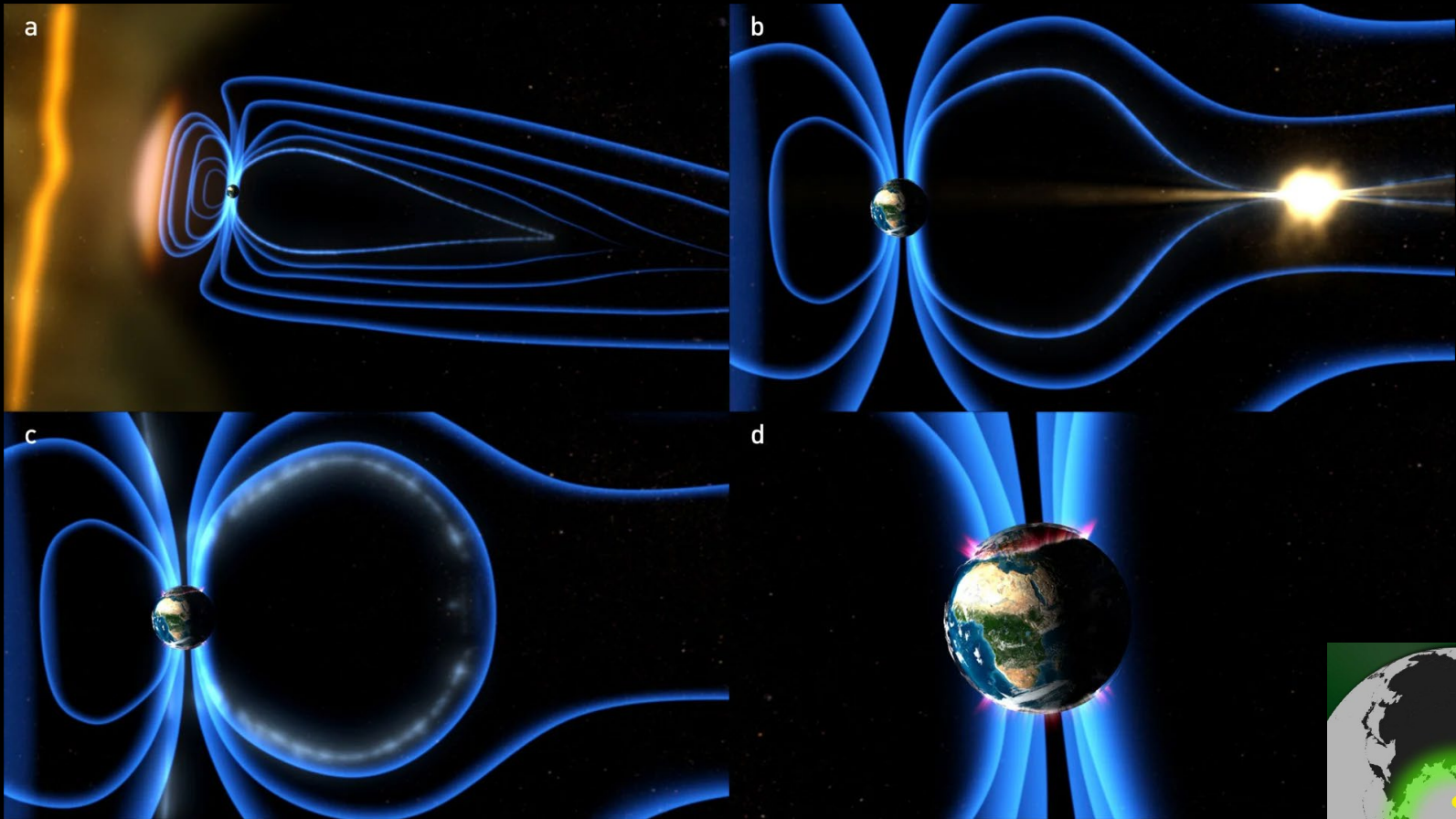


Chasing Awe

11:59pm 10/7/2024 Elk Lake, MN

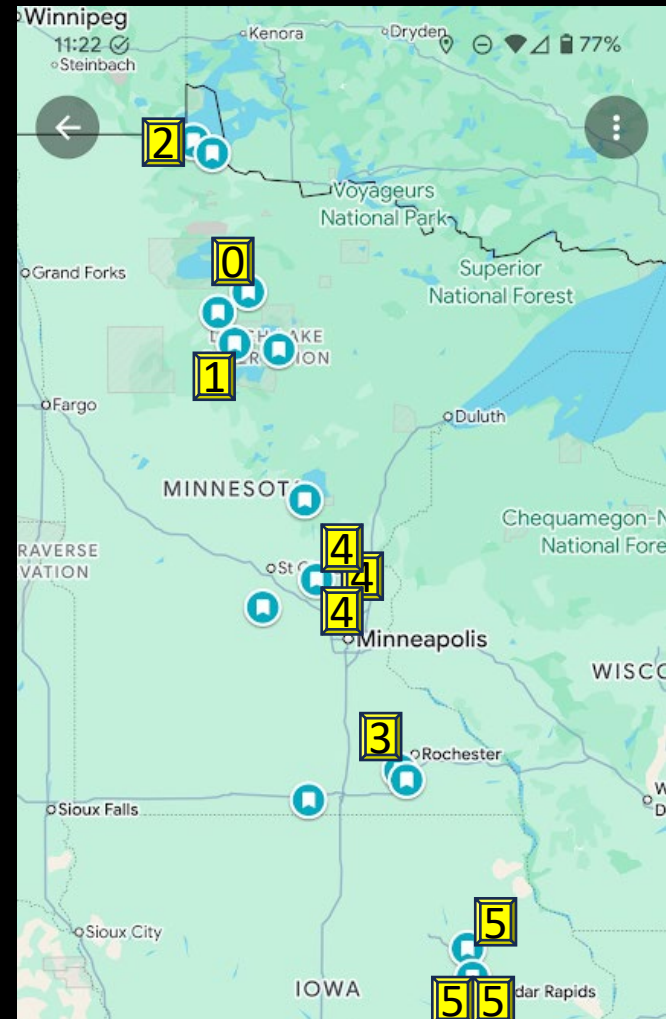
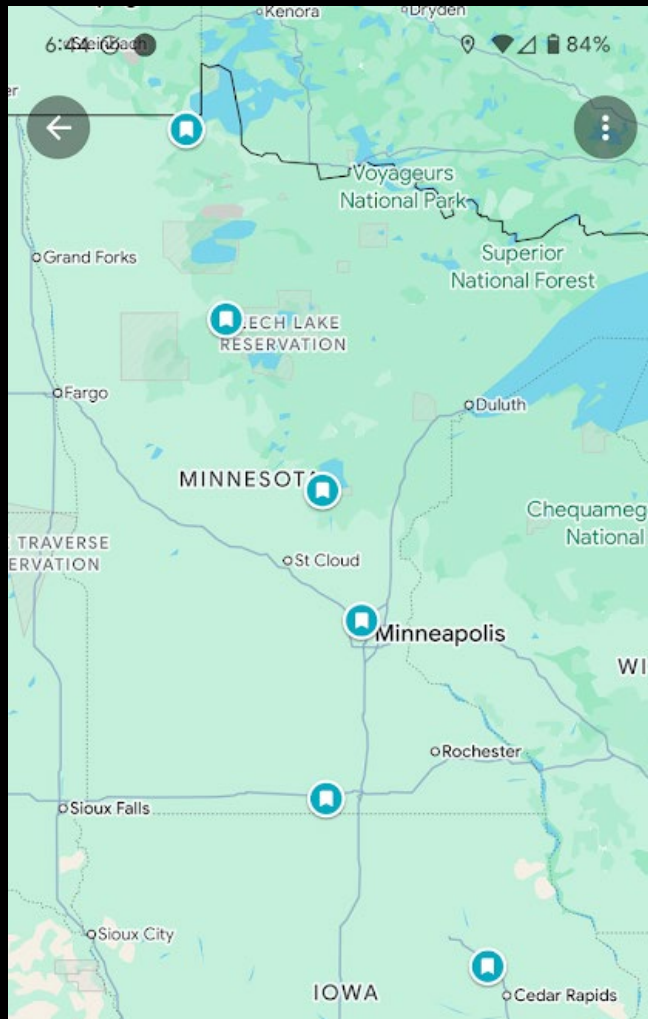
Sheila Kannappan
astroaweseeker@gmail.com
<https://users.physics.unc.edu/~sheila/astroaweseeker.html>


“seeing an aurora” \approx seeing a substorm:
when stretched magnetotail snaps back



but auroral oval is always there around the pole

2 months in MN Sept-Oct 2024 (no tour, no plan, no experience)





magnetic
north

1 first "real thing" at Cass Lake near Bemidji, Sept 12 3:37am

2 Arnesen, near
Warroad, northern
coast of MN,
Sept 12 10:50pm:
first aurora seen
reflected in water,
color just a hint by eye

*downside: so far north
we barely had enough
dog food to make it
back to Minneapolis*





3 field southeast of the Twin Cities, Sept 16 10:24pm
nearly full moon → full-color aurora - 6 sec exposure

October...

1 X7 flare – glancing CME

2

3 X9 flare – better CME

4

5

6

7 *surprise alerts...*

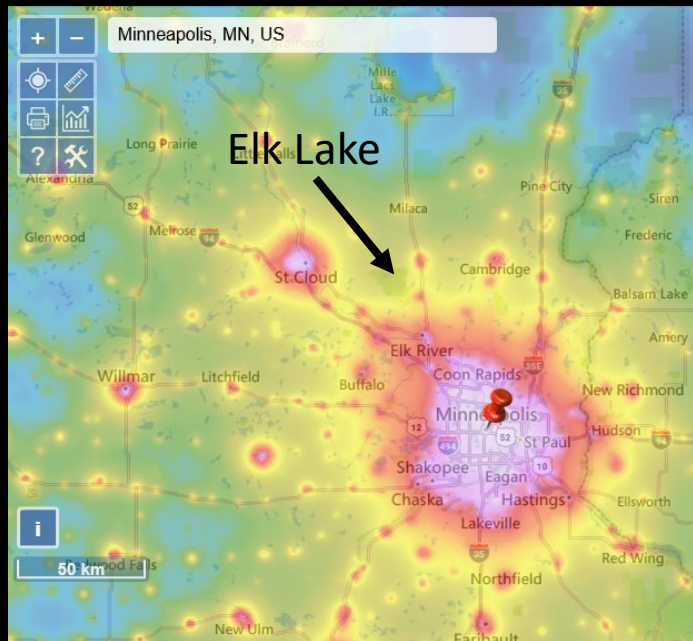
X camped @ Mille Lacs

X roundtrip to Pihls Park

X camped at Pihls Park

X tired/too late/gave up

✓ to Elk Lake 📶📶📶



photos nonstop 10:20-11:43pm



faded, crowd left, got cold, GOES said stay...





4 continued (see also title page...)

October...

1 X7 flare - glancing CME

2

3 X9 flare - better CME

4

5

6

7 *surprise alerts...*

8 X2 flare - "perfect" CME

9

10

✗ camped @ Mille Lacs

✗ roundtrip to Pihls Park

✗ camped at Pihls Park

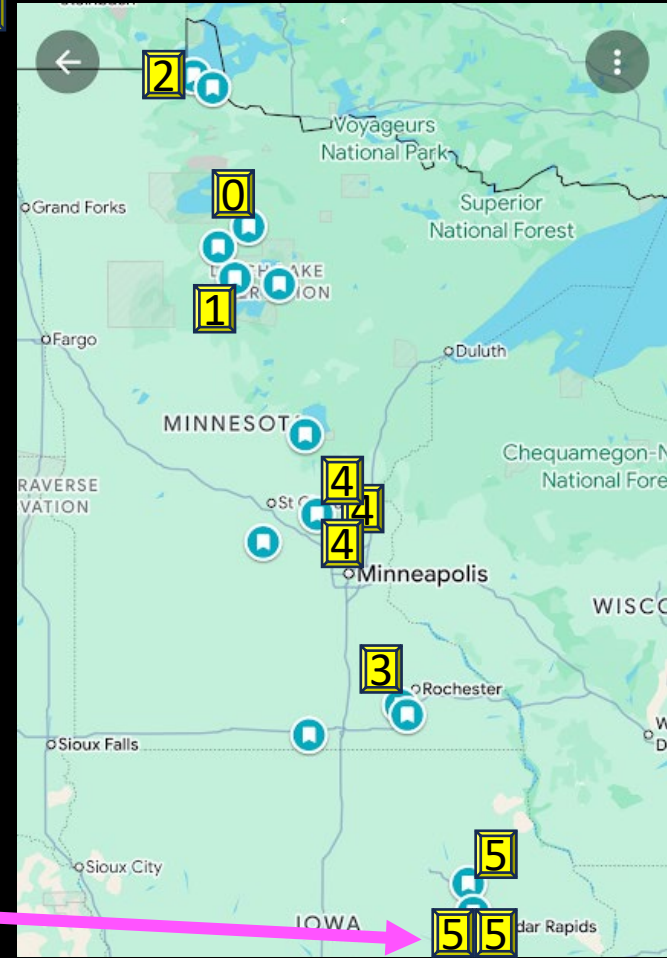
✗ tired/too late/gave up

✓ to Elk Lake 444

✓ to Iowa! 555



9 pm - first substorm





5 2:30am -
third
substorm