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Autor: Slobin, Robert B.
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Aurora 21 November 2003

ROBERT B. SLOBINS

Fig. 1: 0437 UTC Film: Fuji NHG II (ISO 800) Canon F1, Canon 24/1.4L @ f/1.4, 20-30 seconds.

This aurora was the result of a moderate flare that propagated a coronal mass ejection (CME). This CME had a magnetic field orientation and strength sufficient to open up that of the Earth to produce aurorae into low magnetic latitudes.

I generally missed the first episode that occurred during sunset. It was then mostly cloudy in Fort Wayne, Indiana. Because I live north of the city centre, it was difficult to see the red patches to the south that people in darker and clearer locations saw. As the sky cleared later, at about 0200 UTC, 21 November 2003, I went to my observing location only to see some dull glow along the northern horizon.

However, I was again using the SWIM program to follow the geomagnetic storm's progress. So, as the interplanetary magnetic field pointed south again after 0400 UTC on 21 November, I drove out to my dark (relative to Fort Wayne, IN) northern sky site in LaOtto.

At 0414 there was a faint and subtle green glow that extended to 7 - 10 degrees altitude stretching from 310 - 035 azimuth. This was the entire azimuthal range for the entire display. By 0433 this band started to brighten to a moderate green and divide into four sections of rays that slowly moved eastward.

During the entire time, rays slowly formed and moved. There was no motion within any of the forms, just brightness variations. By 0447 these rays reached 30 degrees altitude and higher when I used averted vision. Soon, the rays that were due north started to brighten more and extend upward past Polaris, so that by 0515, this ray extended to 60 degrees altitude and by 0530, to the zenith. I could then trace the ray 120 degrees through Auriga and Taurus to the Pleiades.

By that time, this was the only auroral feature. This ray bundle stayed fixed in azimuth for at least 45 minutes, very slowly changing form. Sometimes, this ray looked like a batch, other times, the ray resolved itself into a bundle of twenty or so individual rays. This portion of the display dimmed down by 0600, but there were other ray complexes visible through Ursa Major and Draco and under Polaris. The band persisted through 0620 when the rays brightened again.

At 0635, rays again rose to 60 degrees (plainly visible up to 30 degrees) merging with the Milky Way in Cassiopeia. Then the rays lost their definition and became patchy. As the band dissipated, these patchy rays began to disappear. As clouds slowly arrived in the NW sky, the band and rays were gone by 0651.

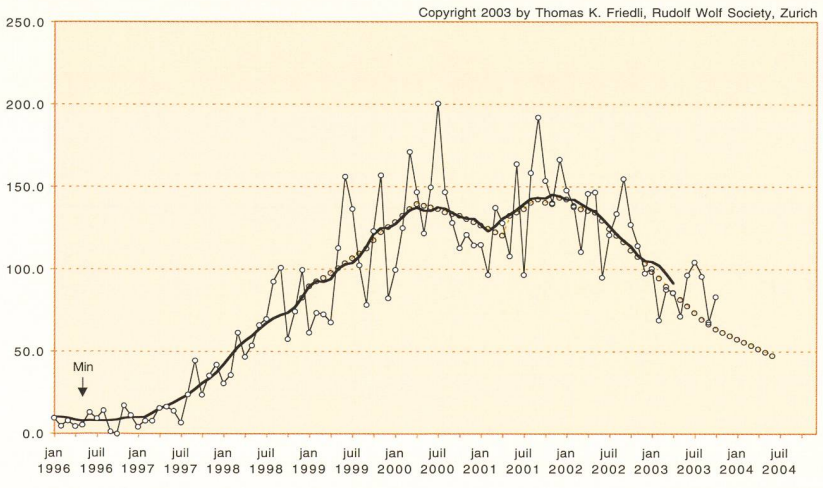
ROBERT B. SLOBINS
Phototake
177 Mains Street #254, Fort Lee, NJ 07024 USA

Fig. 2: 0537 UTC Film: Fuji NPZ (ISO 800) Canon F1, Canon 24/1.4L @ f/1.4, 20-30 seconds.

Fig. 3: 0858 UTC Film: Fuji NPZ (ISO 800) Canon F1, Canon 24/1.4L @ f/1.4, 40-50 seconds.

Swiss Wolf Numbers 2003

MARCEL BISSEGGER, Gasse 52, CH-2553 Safnern



September 2003 Mittel: **68.7**

1	2	3	4	5	6	7	8	9	10
58	62	63	69	72	53	45	22	28	43
11	**12**	**13**	**14**	**15**	**16**	**17**	**18**	**19**	**20**
47	46	44	49	59	61	82	83	74	59
21	**22**	**23**	**24**	**25**	**26**	**27**	**28**	**29**	**30**	**31**
78	75	98	82	91	108	103	109	97	95	

Oktober 2003 Mittel: **77.2**

1	2	3	4	5	6	7	8	9	10
119	94	79	78	80	61	57	73	78	66
11	**12**	**13**	**14**	**15**	**16**	**17**	**18**	**19**	**20**
66	31	14	0	16	29	28	39	53	63
21	**22**	**23**	**24**	**25**	**26**	**27**	**28**	**29**	**30**	**31**
62	71	55	88	109	120	178	226	253	207	107