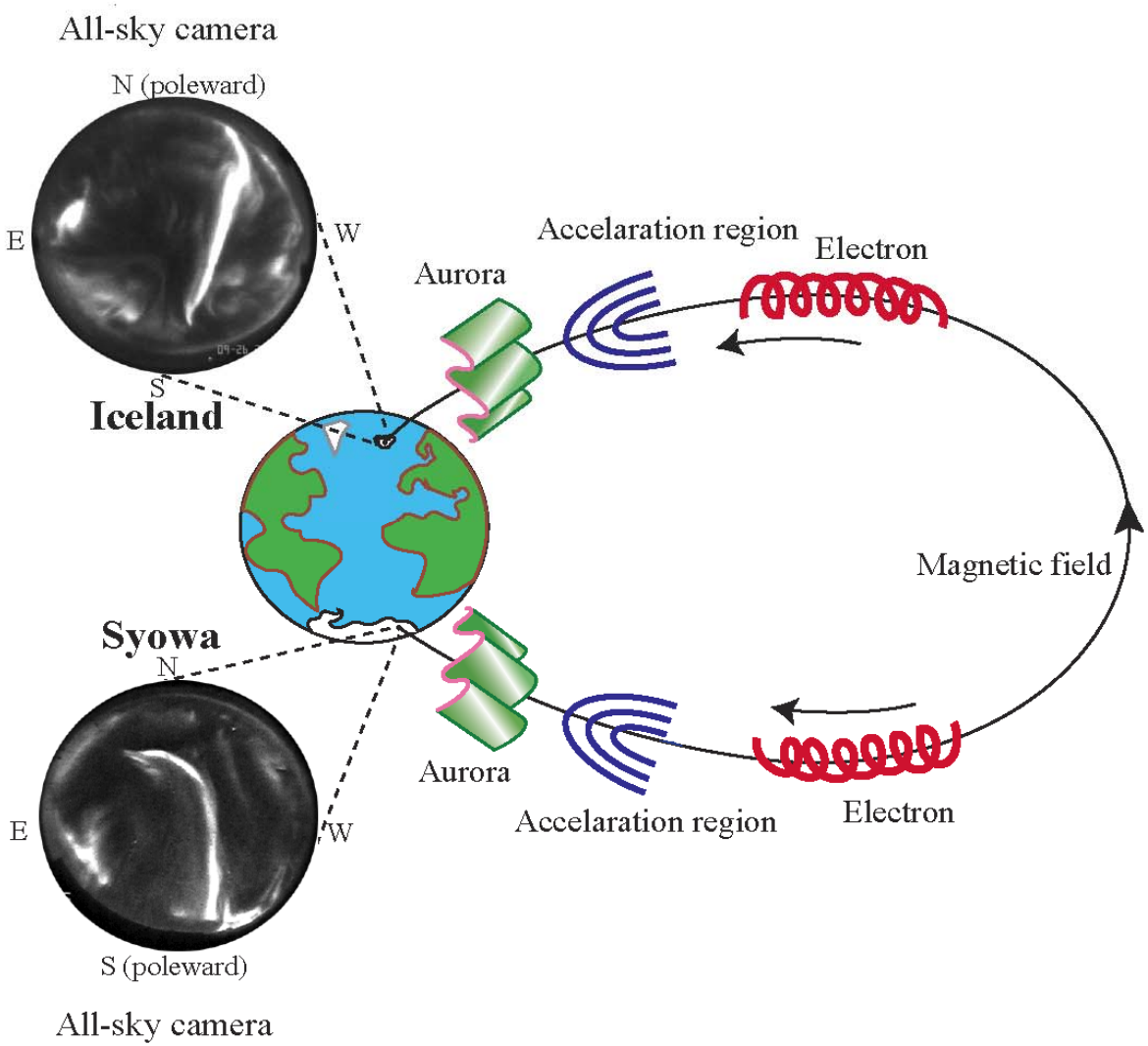
昭和基地ーアイスランド共役点における地磁気活動の長期変動

[1]**Akira Kadokura,**
[1]Natsuo Sato,
[2]Thorsteinn Saemundsson, and
[2]Gunnlaugur Bjornsson

[1]***National Institute of Polar Research,***
[2]*Univ. of Iceland*

Geomagnetic Conjugate relationship between Syowa and Iceland



Conjugate point of Syowa Station in Iceland (IGRF)

Geographic & Geomagnetic Parameters

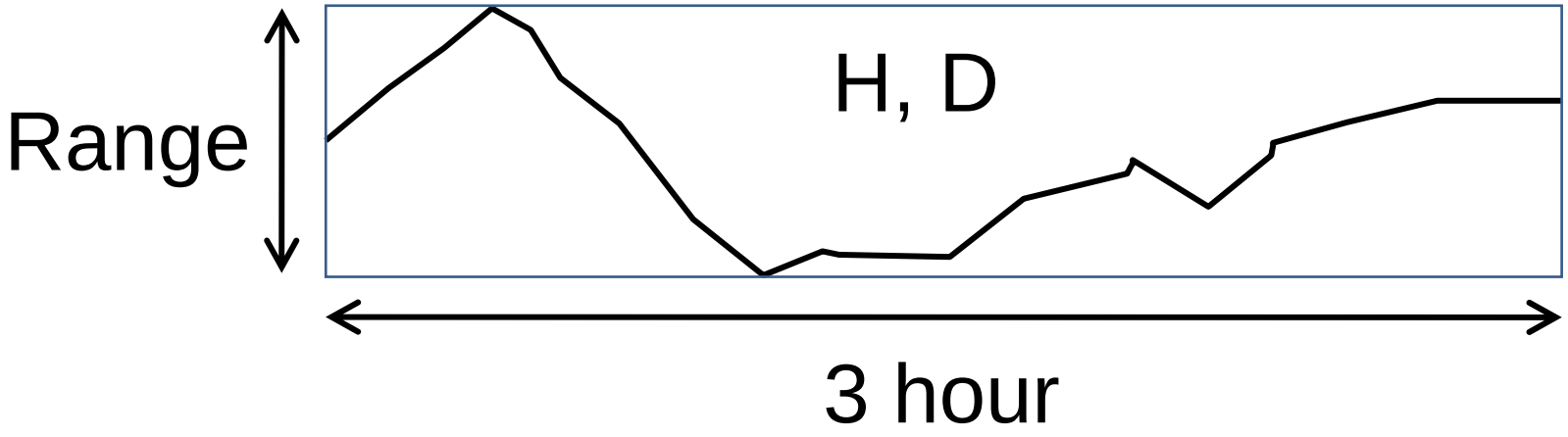
Geographic & Geomagnetic Parameters 1965 / 2013										
Station	Glat (deg)	Glon (deg)	Inv.lat (deg)	Mlon (deg)	MLT(hr) at 0 UT	L value	D (deg)	I (deg)	B (nT)	B_S /B_N
Syowa	-69.00	39.58	66.12 66.45	70.05 72.77	23.62 23.68	6.10 6.26	-45.26 -49.57	-65.97 -63.43	46612 42813	-
Leirvogur	64.18	-21.70	66.22 64.58	69.53 65.72	23.58 23.21	6.15 5.43	-25.18 -15.13	76.00 75.54	51631 52377	0.90 0.82
Husafell	64.67	-21.03	66.58 65.01	70.49 66.57	23.65 23.26	6.33 5.60	-25.01 -15.00	76.20 75.79	51657 52433	0.90 0.82
Tjornes	66.20	-17.12	67.39 66.13	74.97 70.77	23.95 23.54	6.77 6.11	-23.11 -13.47	76.69 76.49	51630 52519	0.90 0.82

K-index at Leirvogur (LRV)

K	0	1	2	3	4	5	6	7	8	9
Range (nT)	0-15	15-30	30-60	60-120	120-210	210-360	360-600	600-990	990-1500	1500-

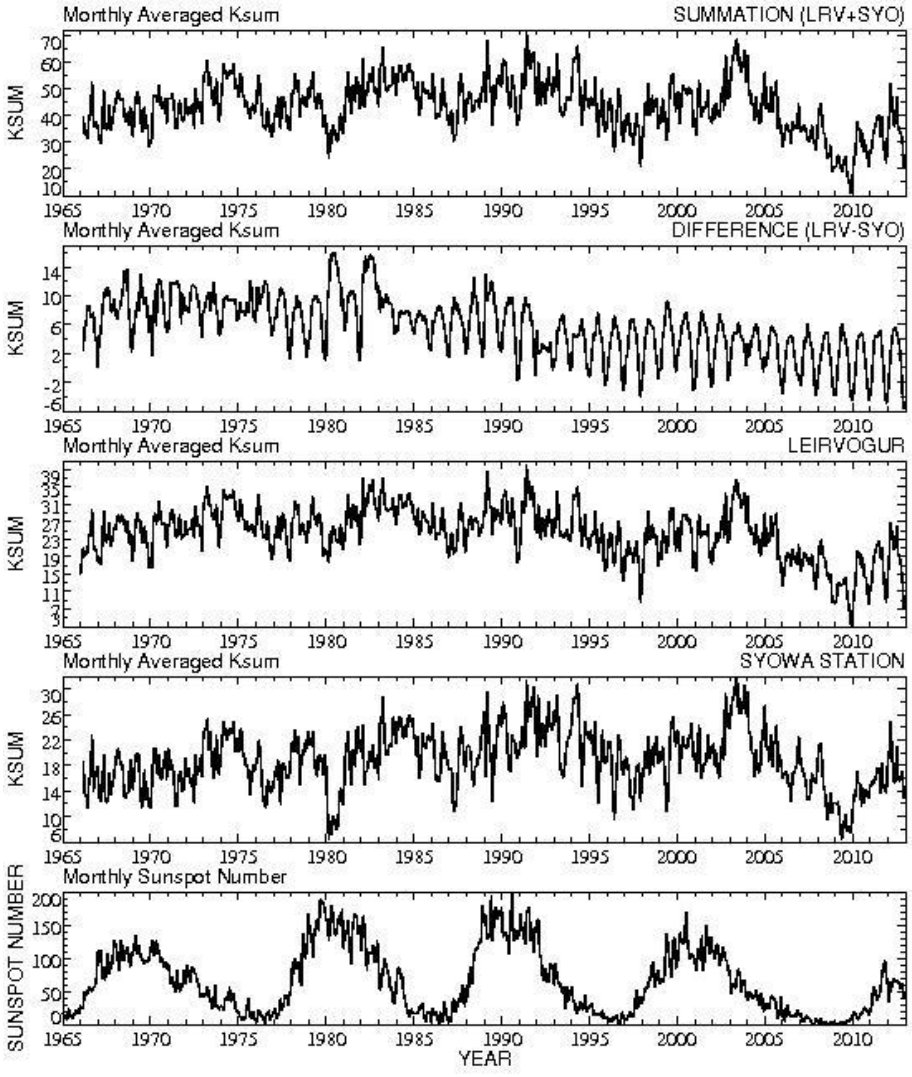
K-index at Syowa Station (SYO)

K	0	1	2	3	4	5	6	7	8	9
Range (nT)	0-25	25-50	50-100	100-200	200-350	350-600	600-1000	1000-1650	1650-2500	2500-

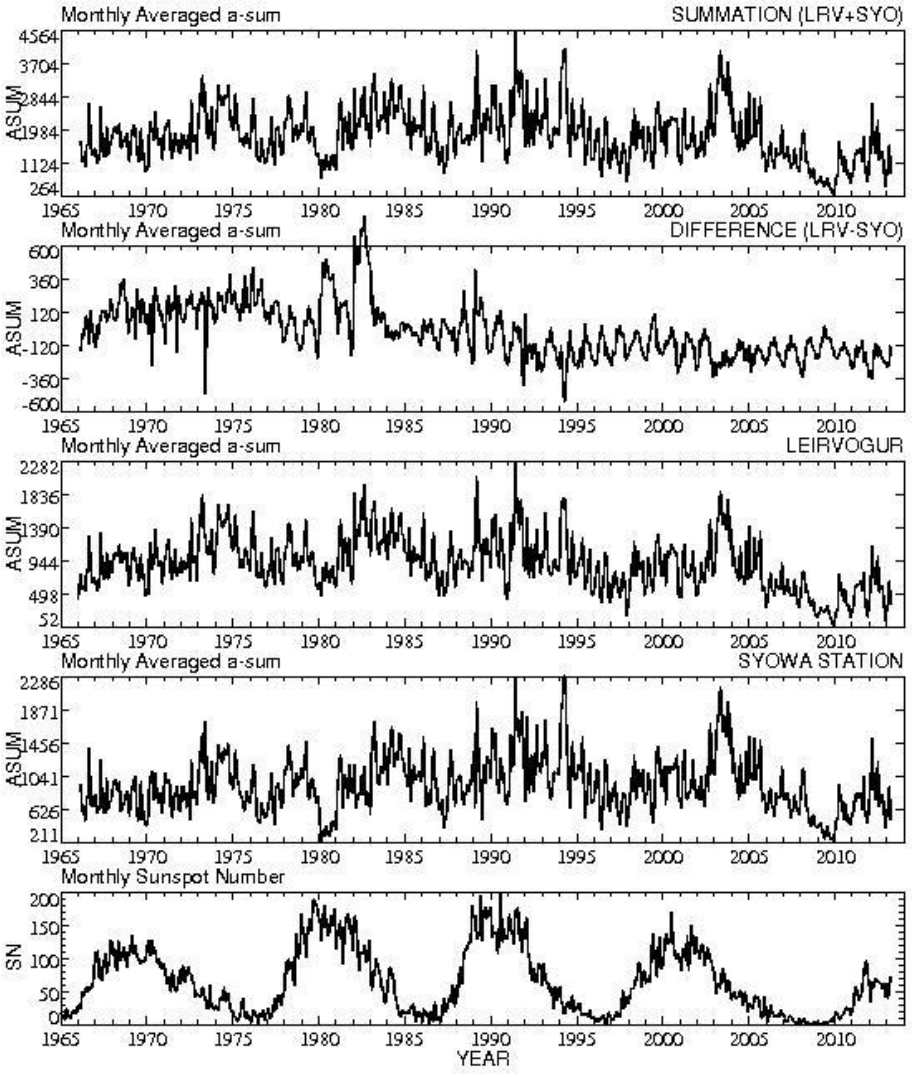


Long-term variation of K-index & a-index

Monthly averaged Ksum

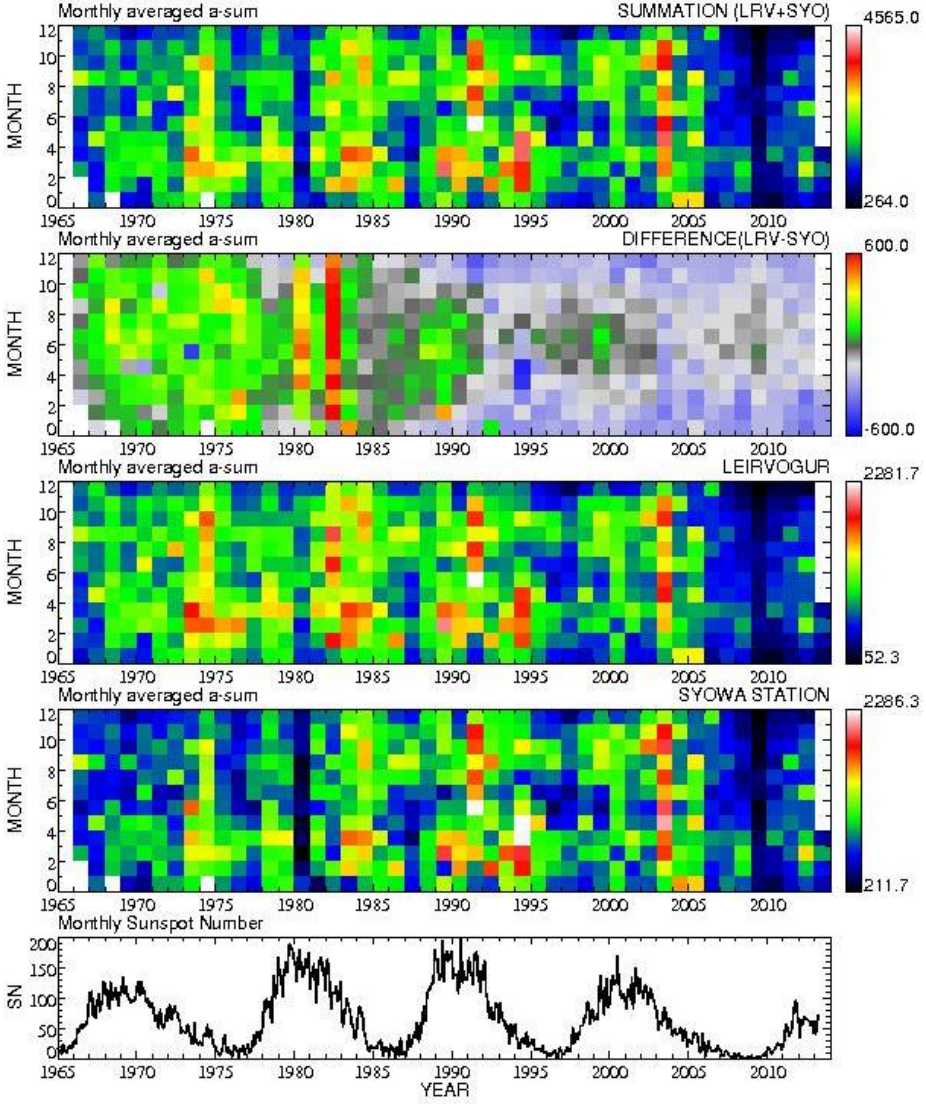


Monthly averaged a-sum

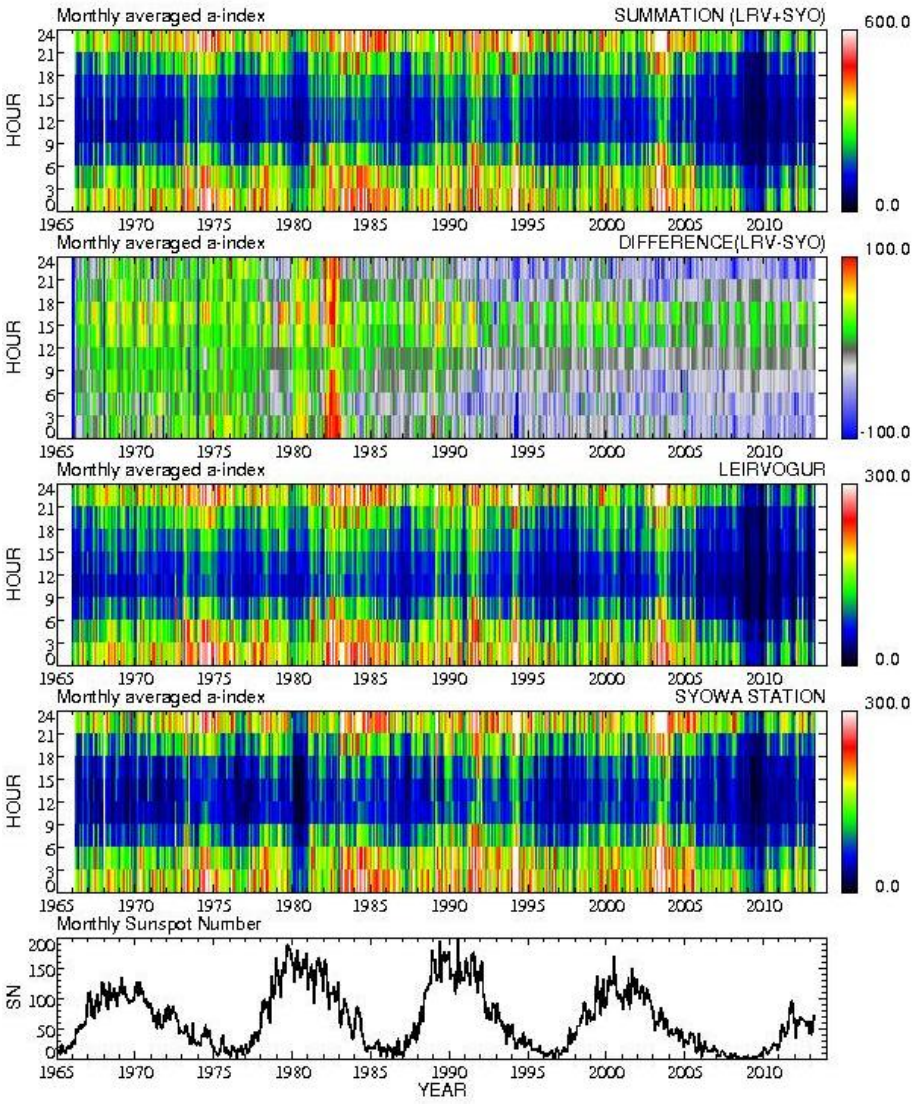


Long-term variation of monthly averaged a-sum

Annual variation



Daily variation



Summary

- Activity at LRV gradually decreased, relatively to one at SYO, which could be due to the long-term variation of the geomagnetic latitude at LRV toward the lower latitudes.
- 2009 was the most quiet year at both stations.
- During the solar cycle 24, activity was low at both stations.
- A significant difference was observed in 1980 and 1982, when the activity was much more quiet at SYO than LRV.
- Activity peak around equinox period can be seen more clearly in the nightside hours, while the summer-winter difference is more clear in the dayside.
- Peak of the summer-winter difference in the dayside shifts post-noon hours due to the difference in local times.
- In the nightside, a reversed sense winter-summer variation can be seen.
- Most intense activity can be seen in spring season during the period of simultaneous darkness in both hemispheres.