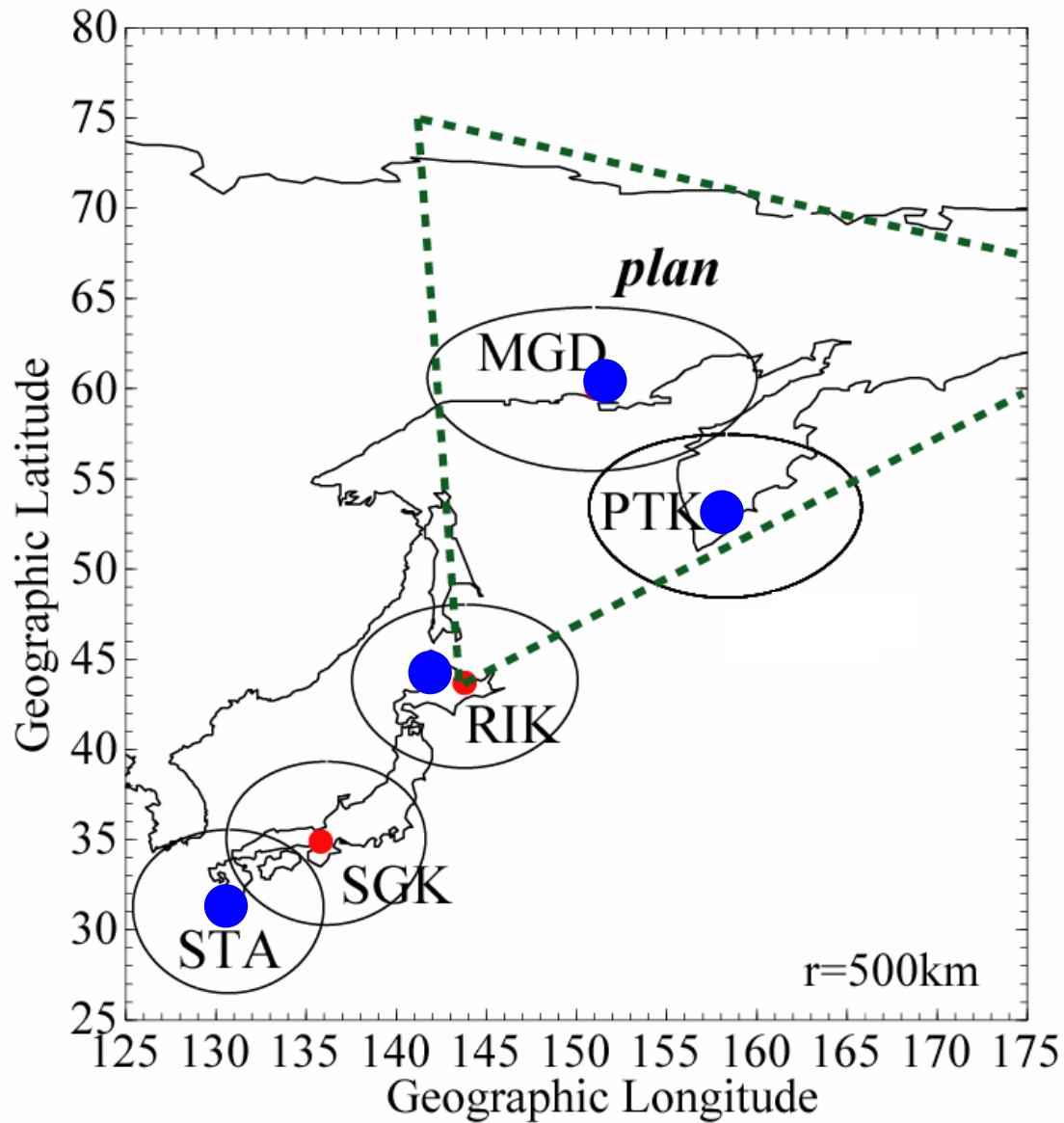




パラツンカの高感度全天カメラと北海道
短波レーダーによるMSTIDの同時観測

*MSTIDs measured by the airglow imager
at Paratunka and the SuperDARN
Hokkaido radar*

塩川和夫、小川忠彦、大塚雄一、西谷望
(名古屋大学太陽地球環境研究所)
B. Shevtsov (IKIR, FEB, RAS)



Paratunka (PTK)
All-Sky Imager
Induction
magnetometer
Observation was
started from Aug.17,
2007.

Stecolney (MGD)
All-Sky Imager
Induction
magnetometer
Will be started in
summer 2008

Paratunka

All-Sky Imager (since August 17, 2007)

**OI (557.7nm, 30s), OI (630.0nm, 40s), OH-bands (3s)
time resolution: 1.5 min**

**Hbeta (486.1nm, 40s), OI (777.4nm, 40s)
time resolution: 10 min**

Induction magnetometer (since August 21, 2007)

H, D, Z, GPS-triggered 64-Hz sampling

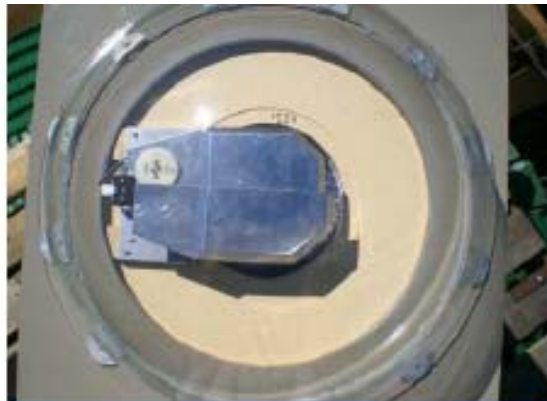
Stecolney (summer 2008)

All-Sky Imager

**OI (557.7nm, 5s), OI (630.0nm, 30s),
Hbeta (486.1nm, 40s), Na (589.3nm, 15s)
OH-bands (1s), OI (844.6nm, 25s)**

Induction magnetometer

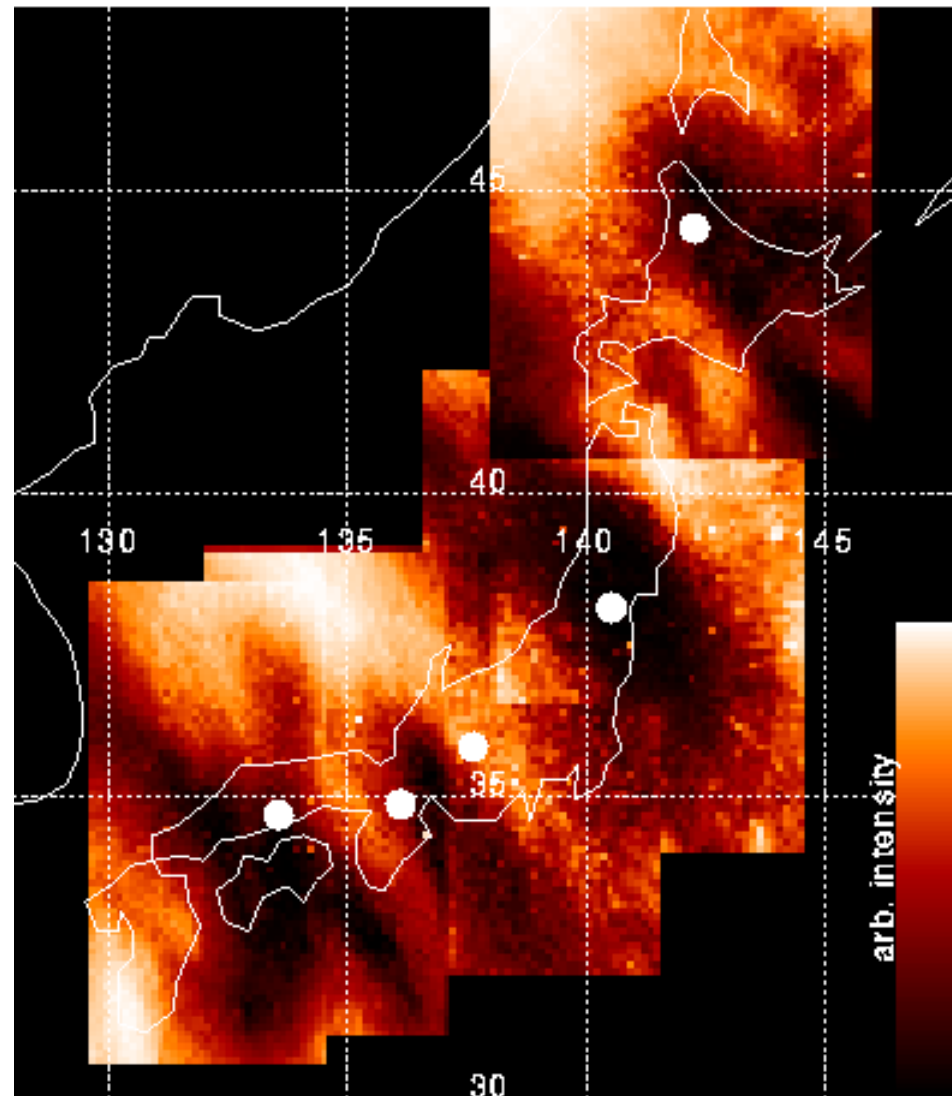
H, D, Z, GPS-triggered 64-Hz sampling



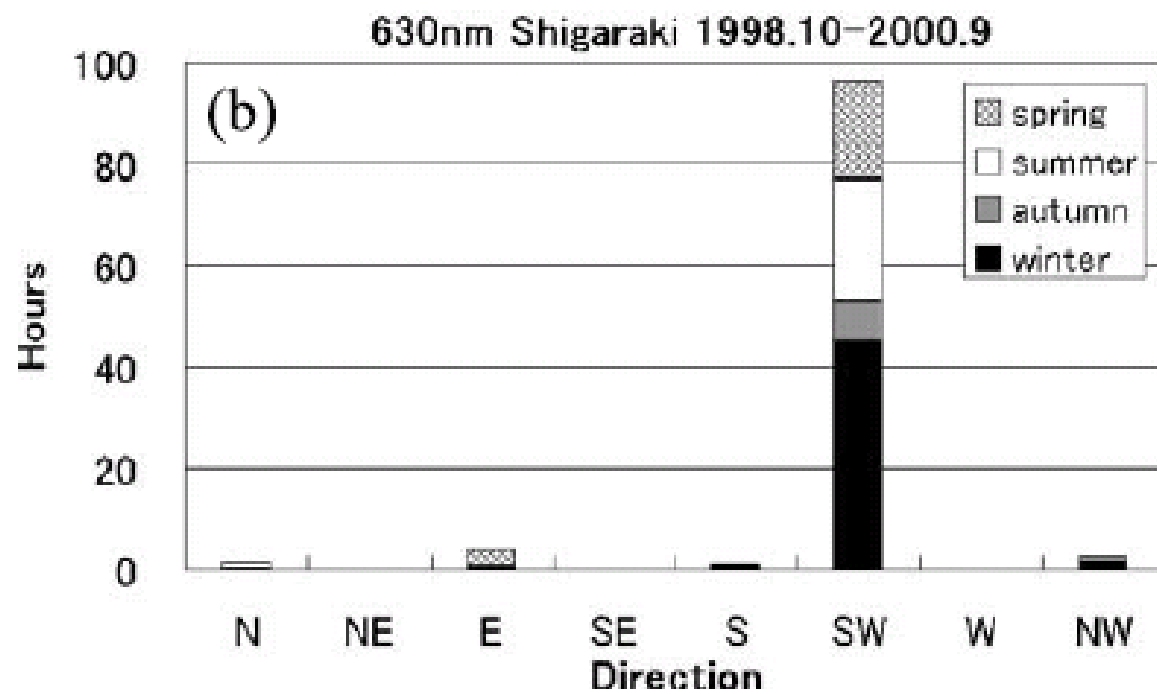
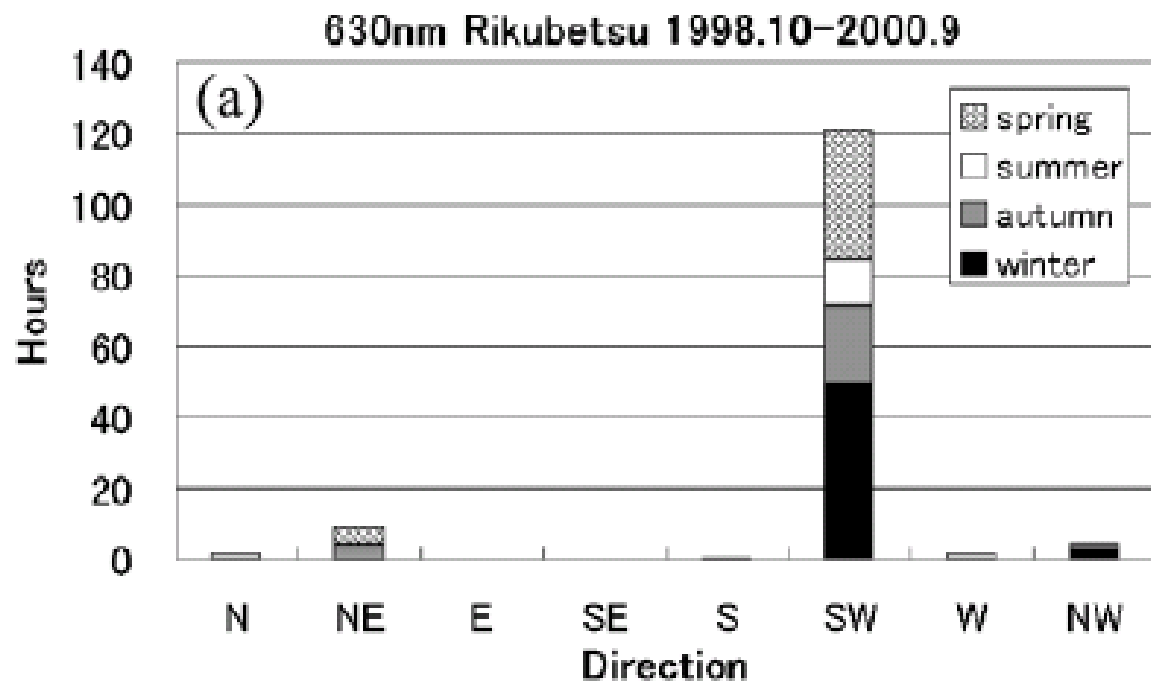
OI 630-nm emission

22/05/1998

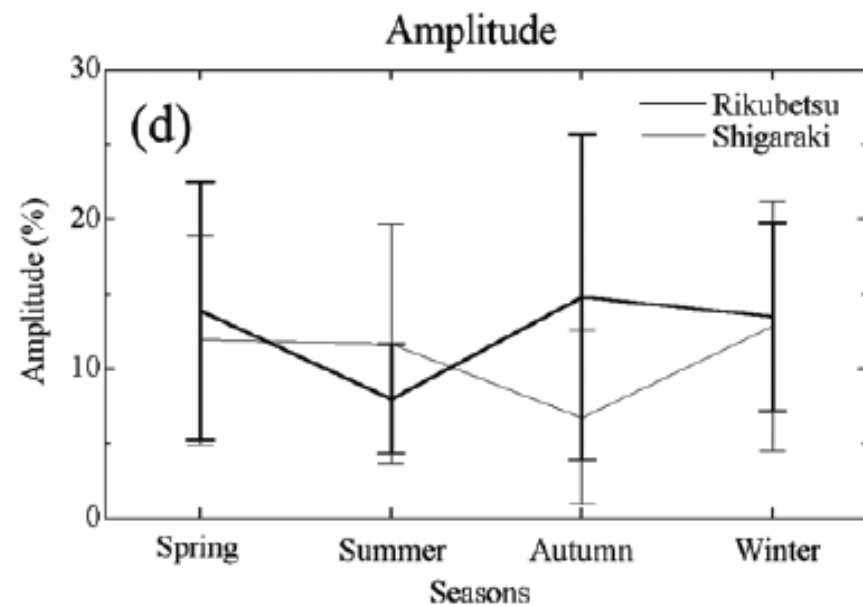
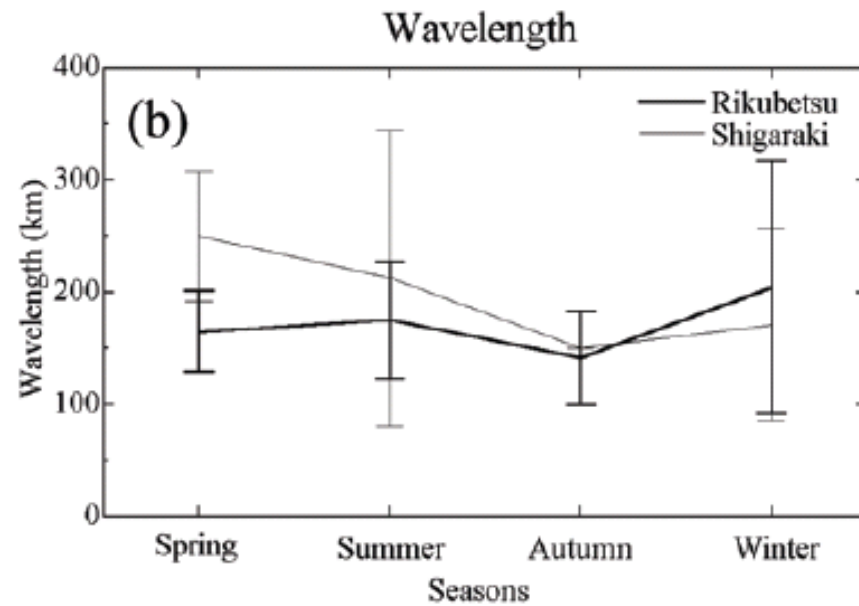
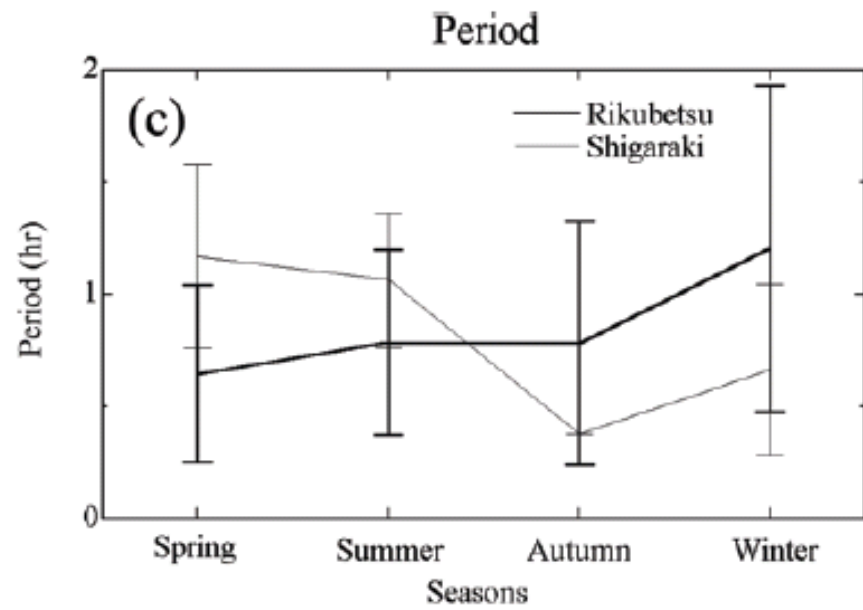
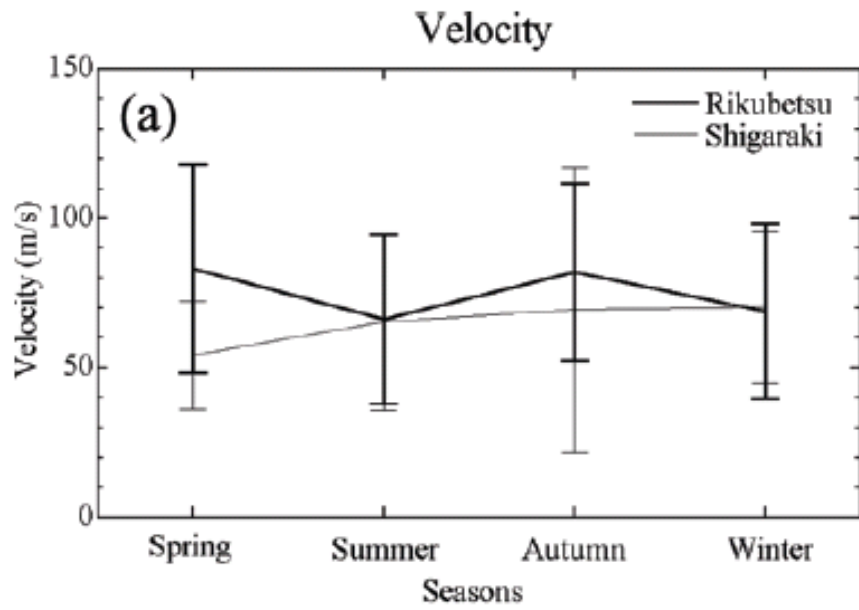
21:31 JST



Kubota et al.(GRL, 2000); Saito et al. (GRL, 2001)

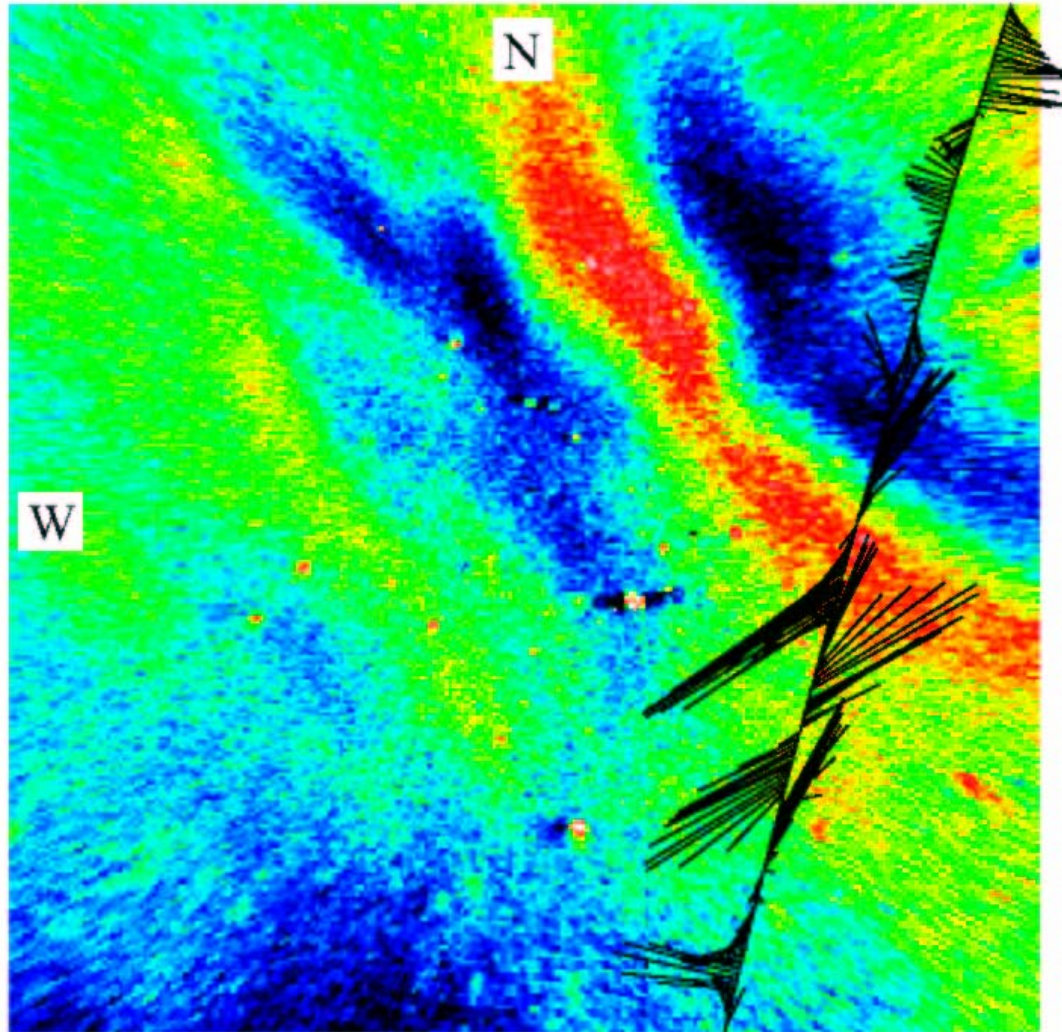
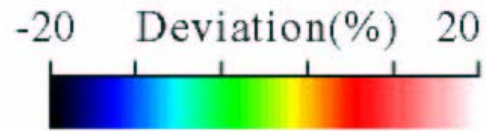


Shiokawa et al.
(JGR, 2003b)



Shigaraki 630nm
altitude: 300 km

May 17, 2001, 1220:49UT, 1024kmX1024km

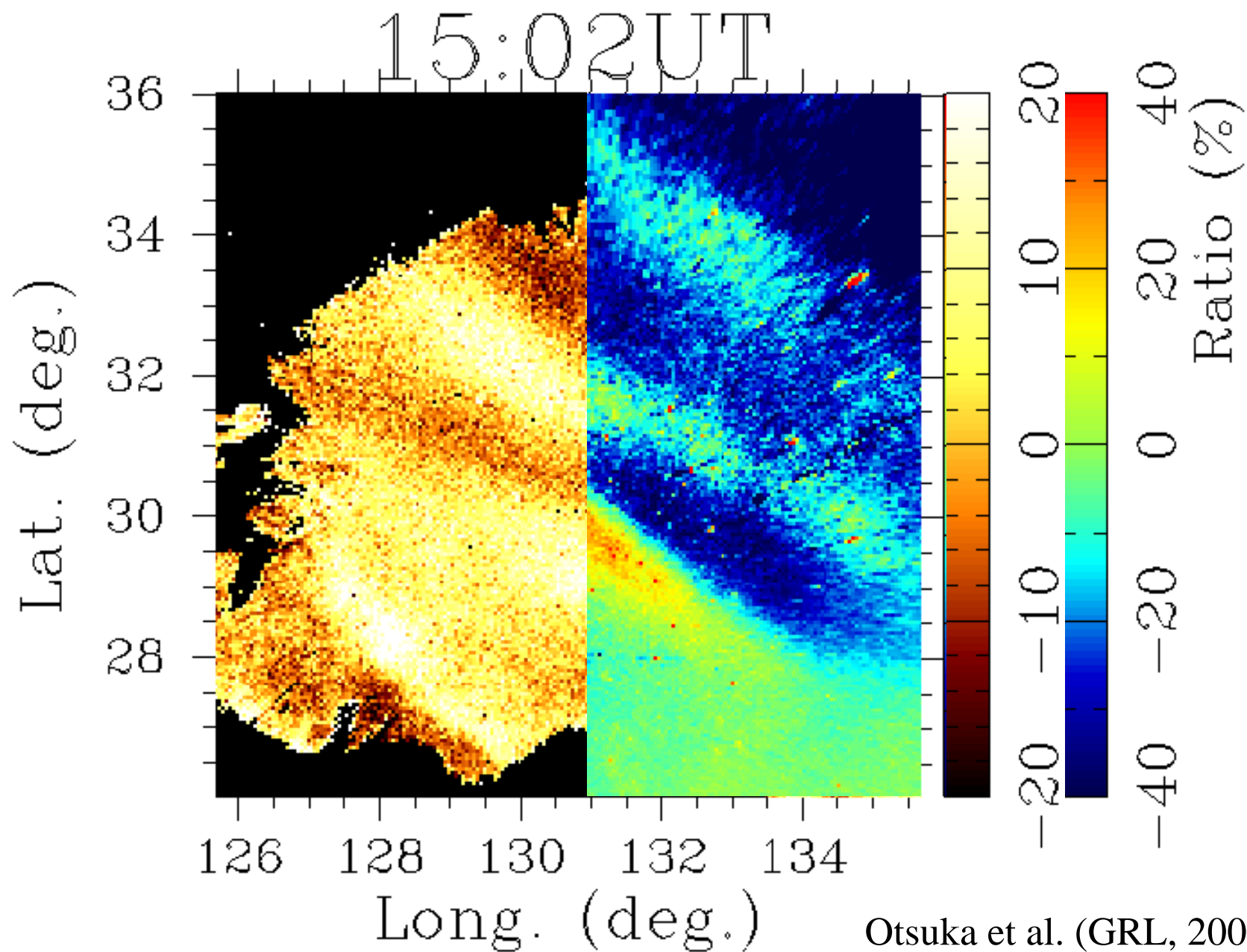


Electric Field Vector



DMSP F15
1221:18-1224:29UT

Shiokawa et al. (JGR, 2003a)



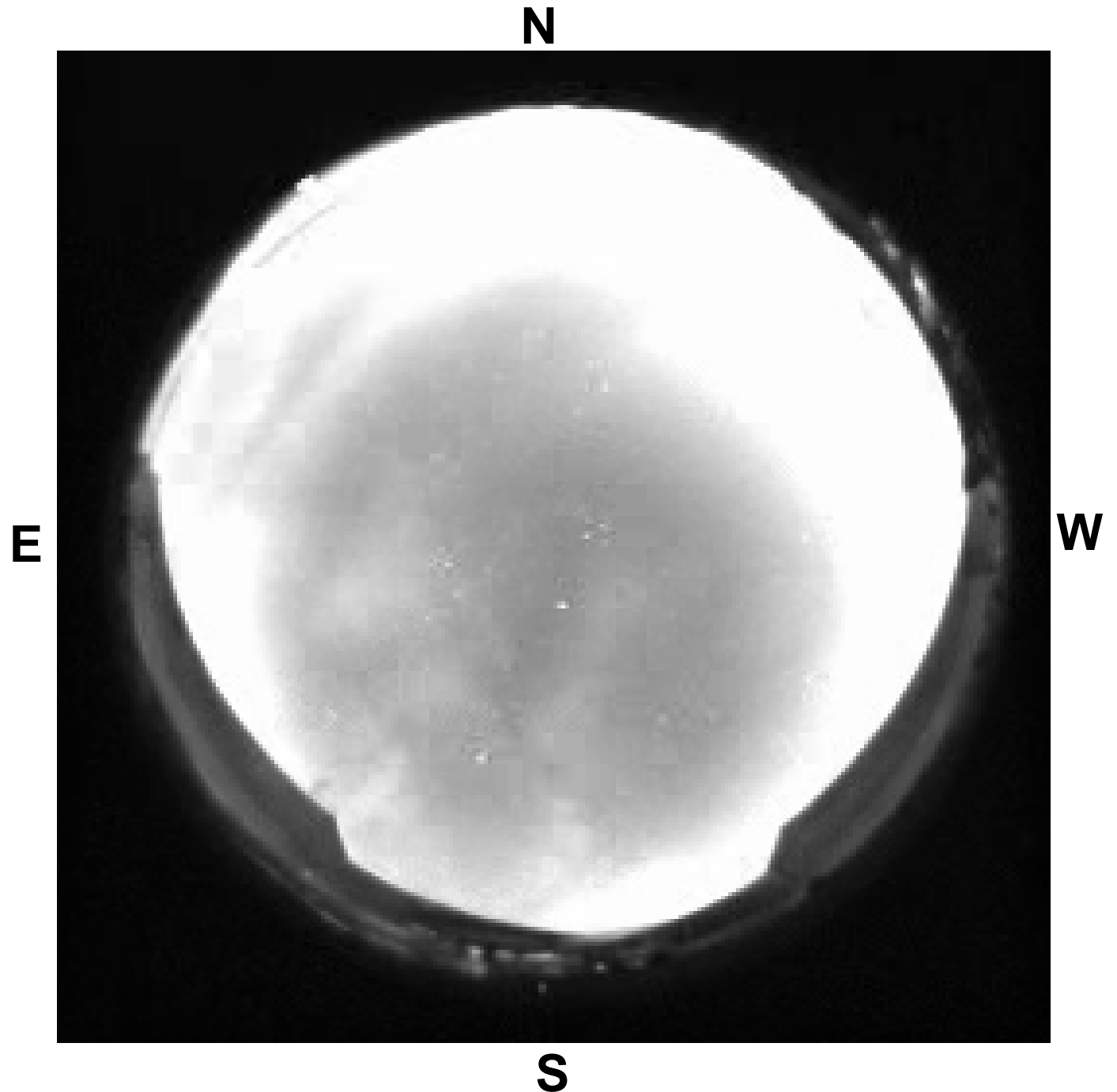
Otsuka et al. (GRL, 2004)

Aug.19, 2007
1010-1636UT
(1910-0236LT)

630nm (ch.2)

Paratunka

南西に伝搬しか
けて、また北東
に戻るMSTIDが
画面の左上に見
える

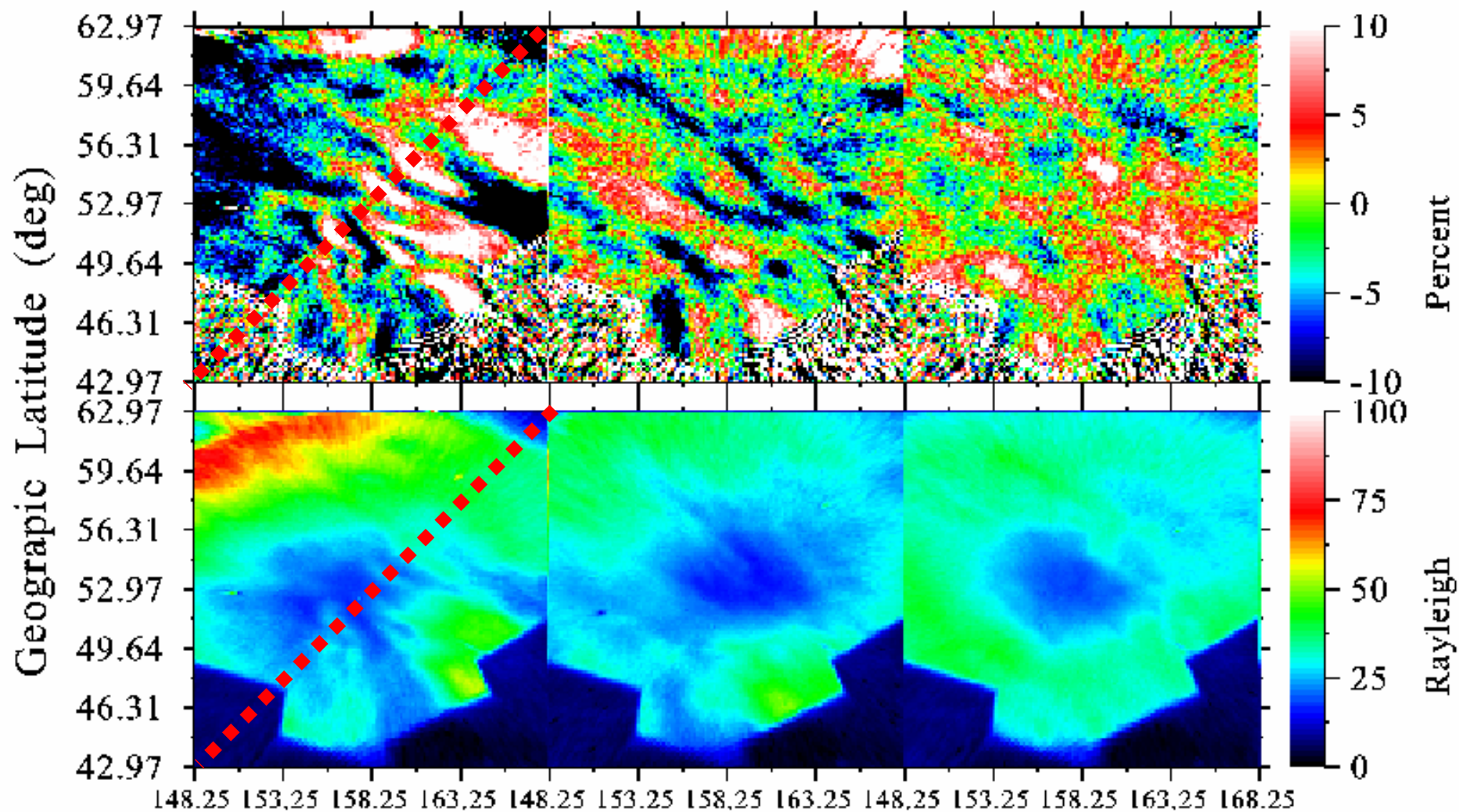


Paratunka (630.0nm) 070819

11:00UT

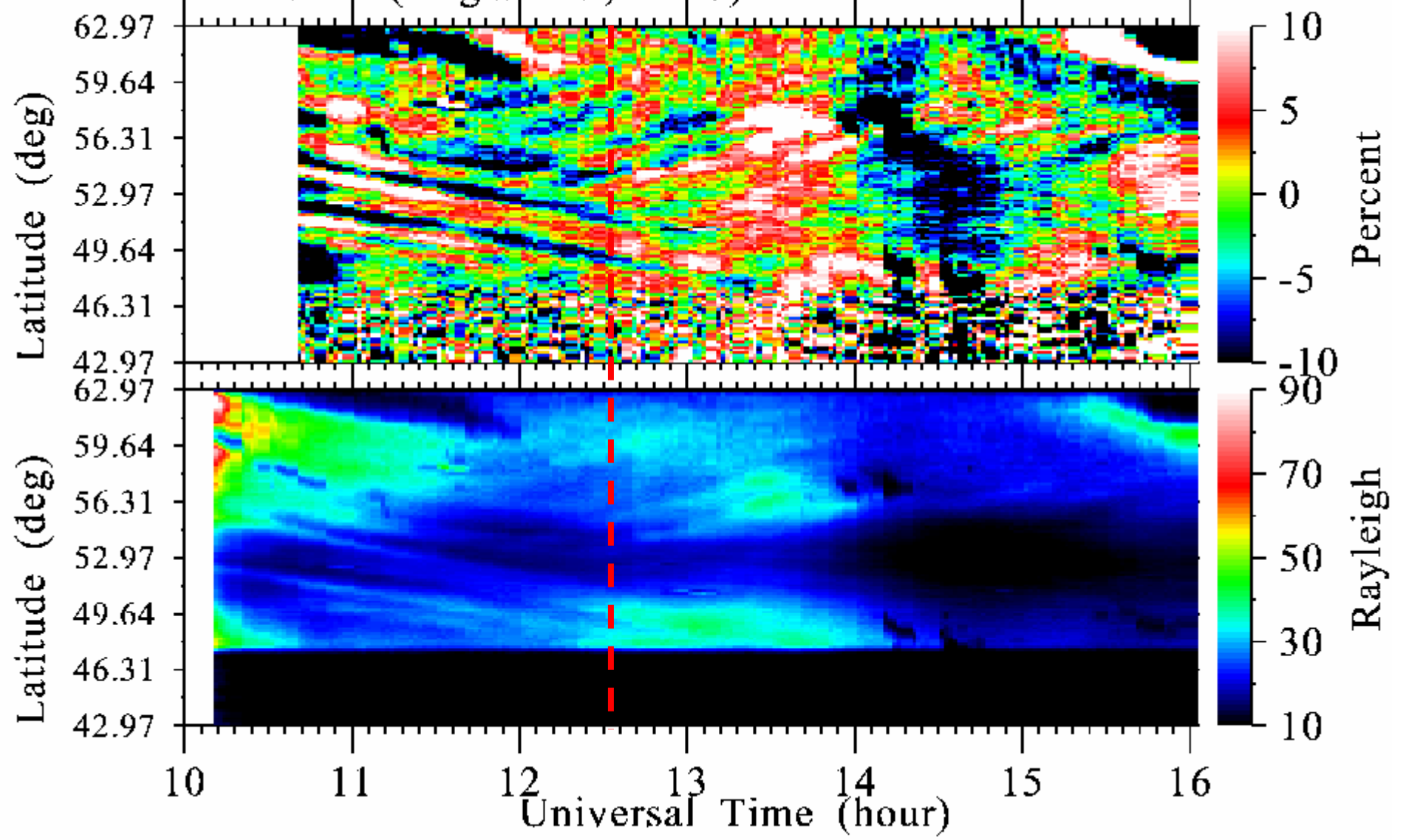
12:00UT

13:00UT

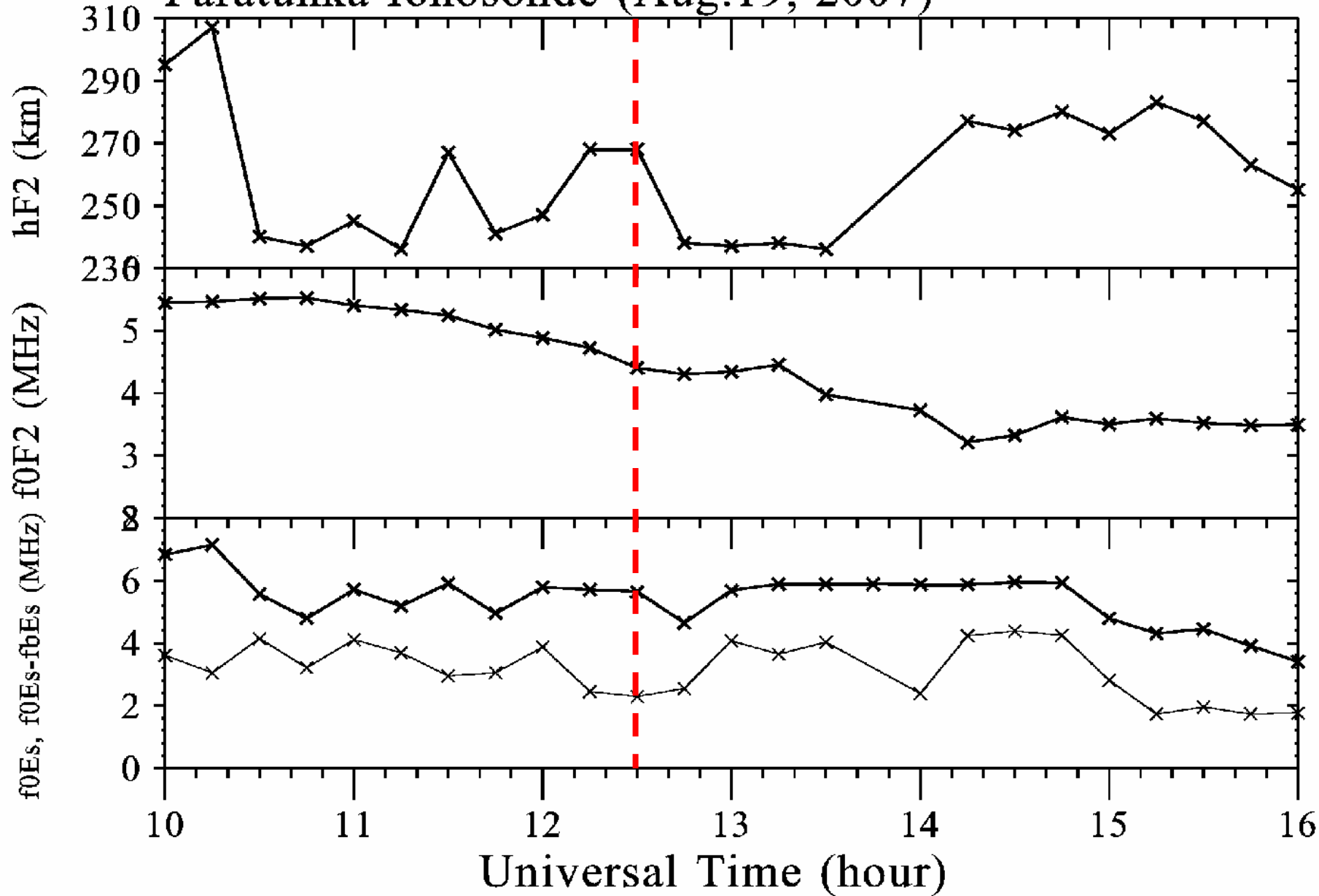


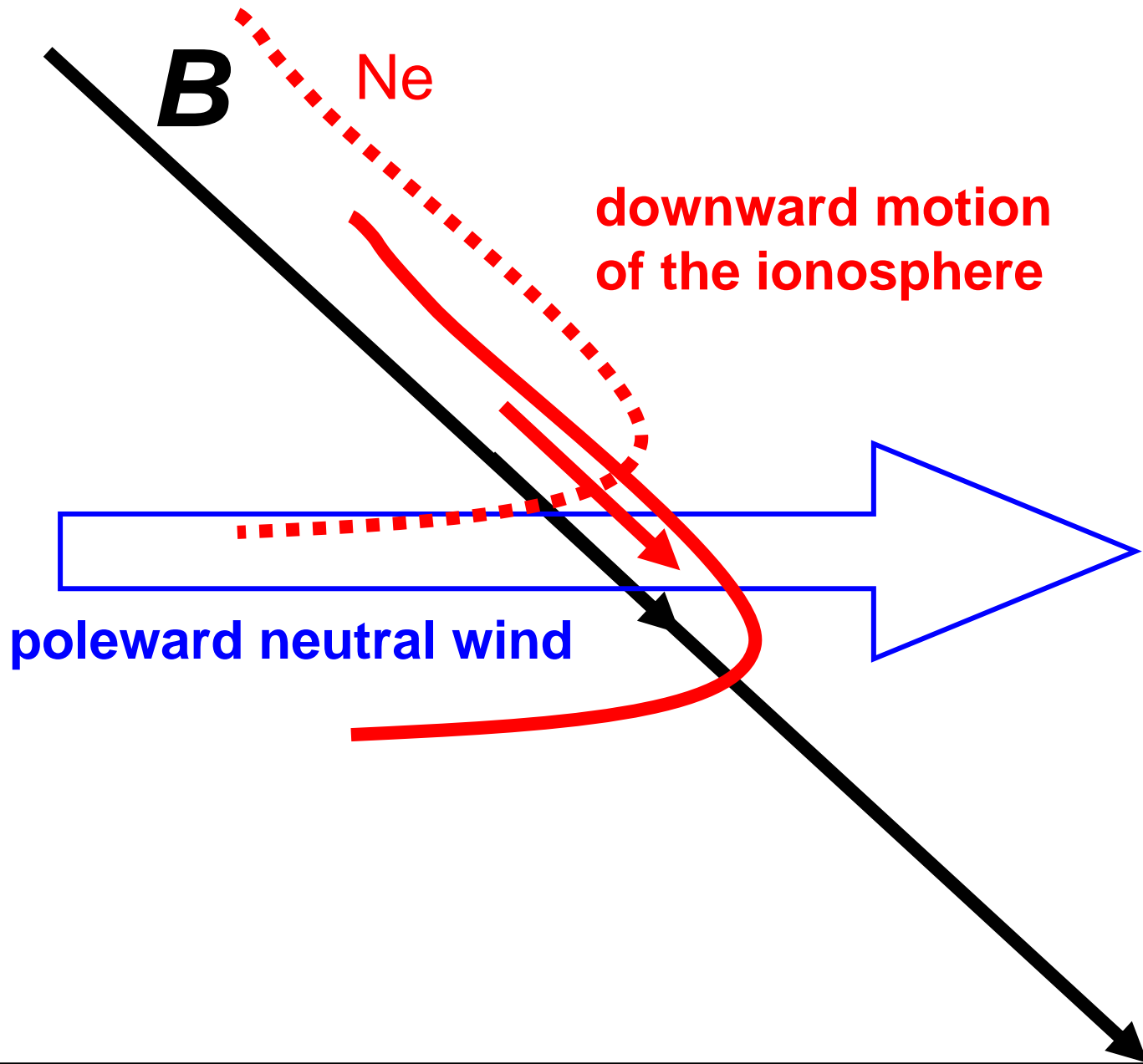
Geograpic Longitude (deg)

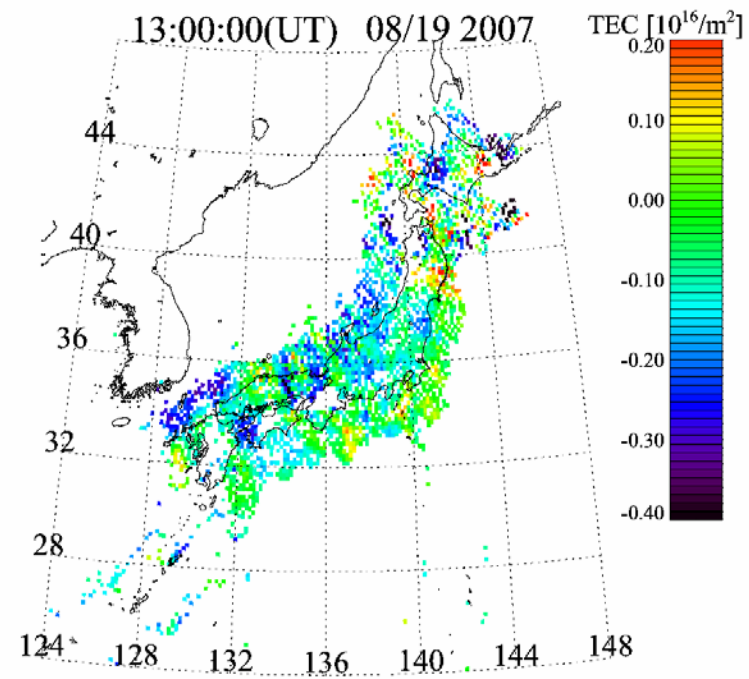
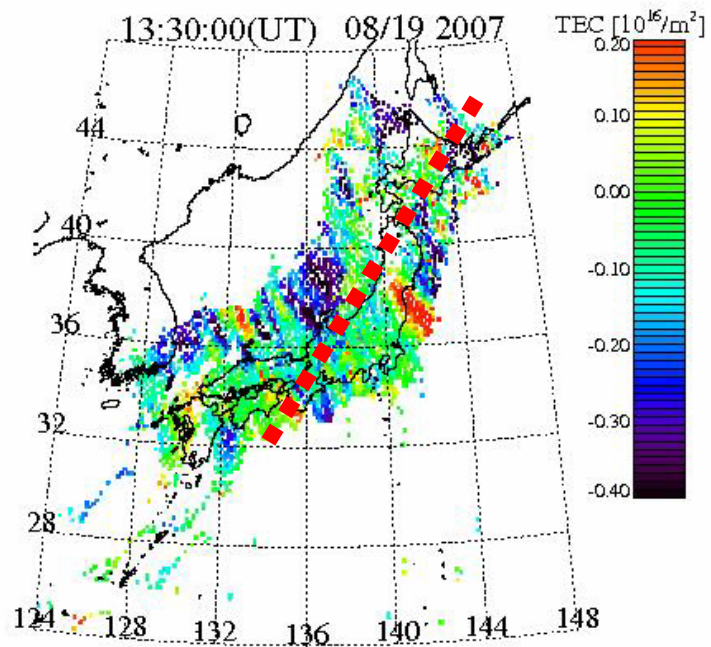
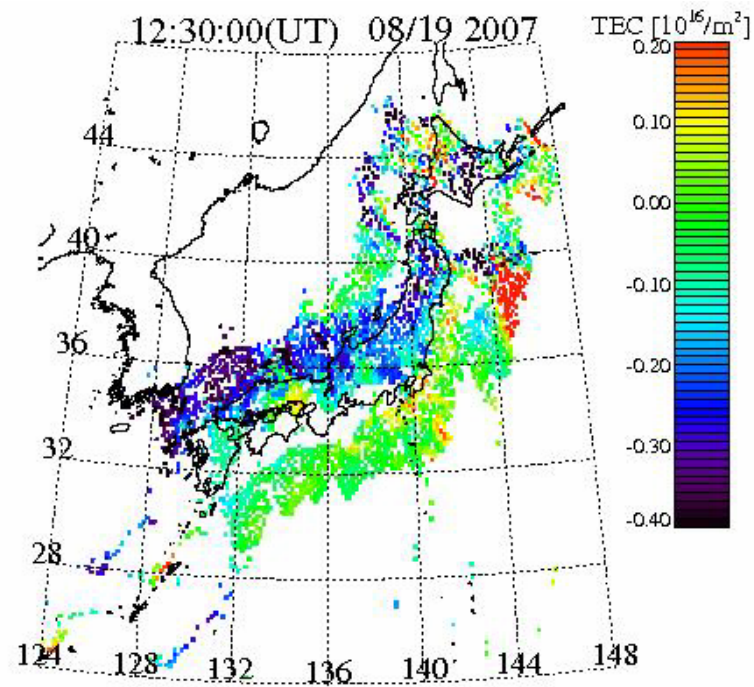
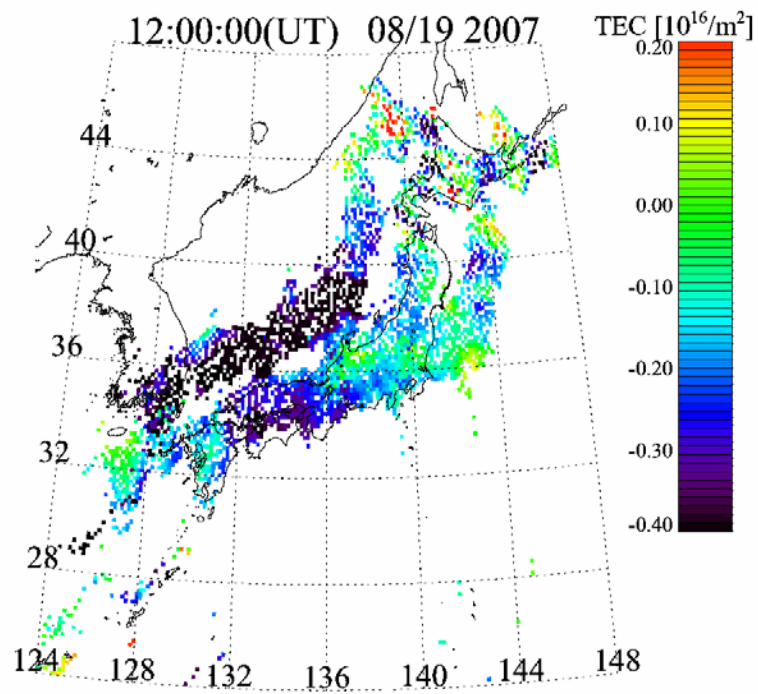
Paratunka (August 19, 2007) 630.0nm



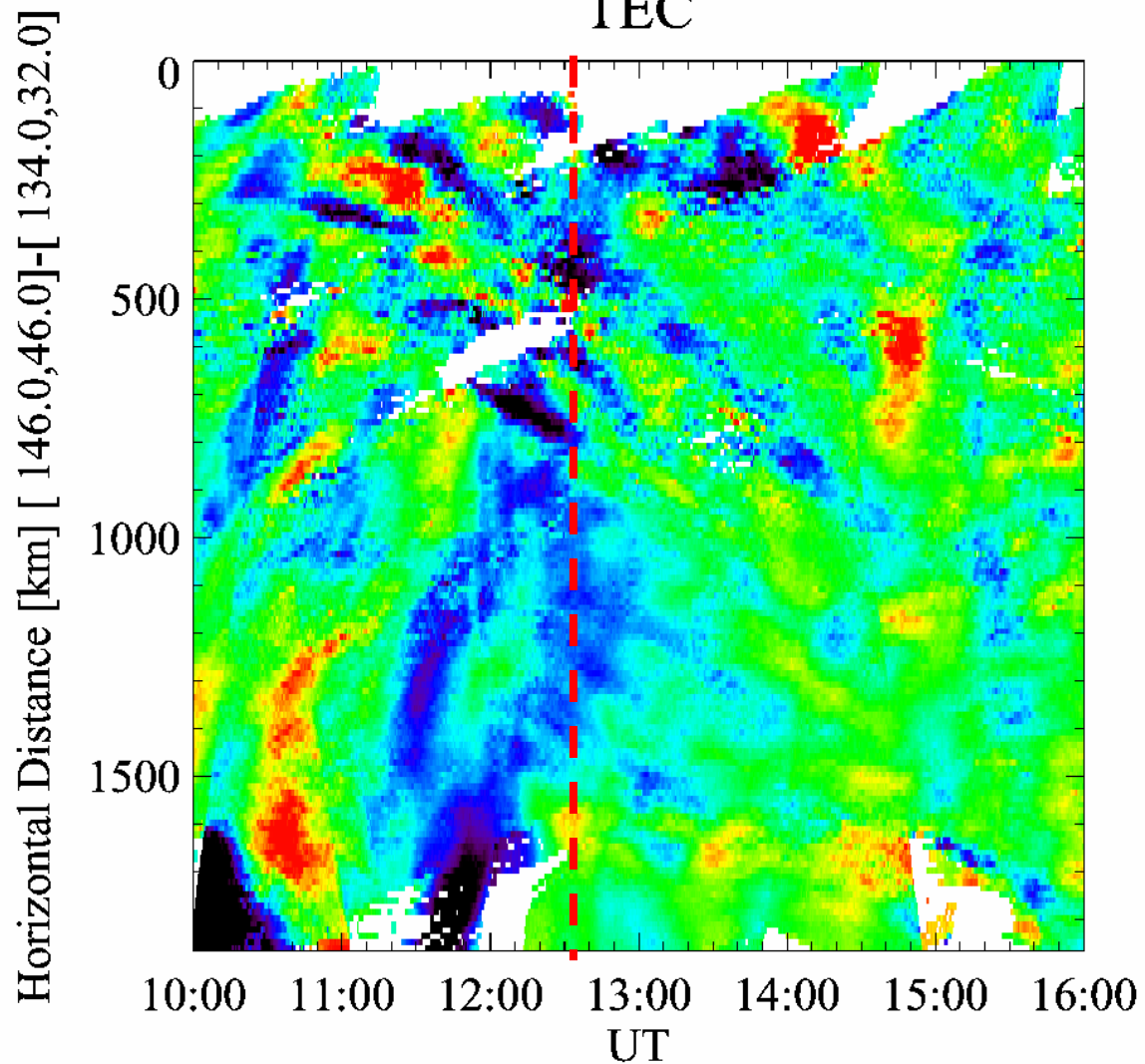
Paratunka Ionosonde (Aug.19, 2007)



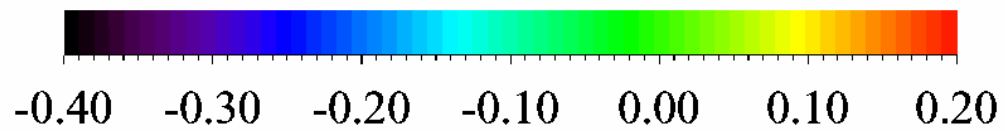




Aug 19, 2007
TEC



TEC [10^{16} el/m²]

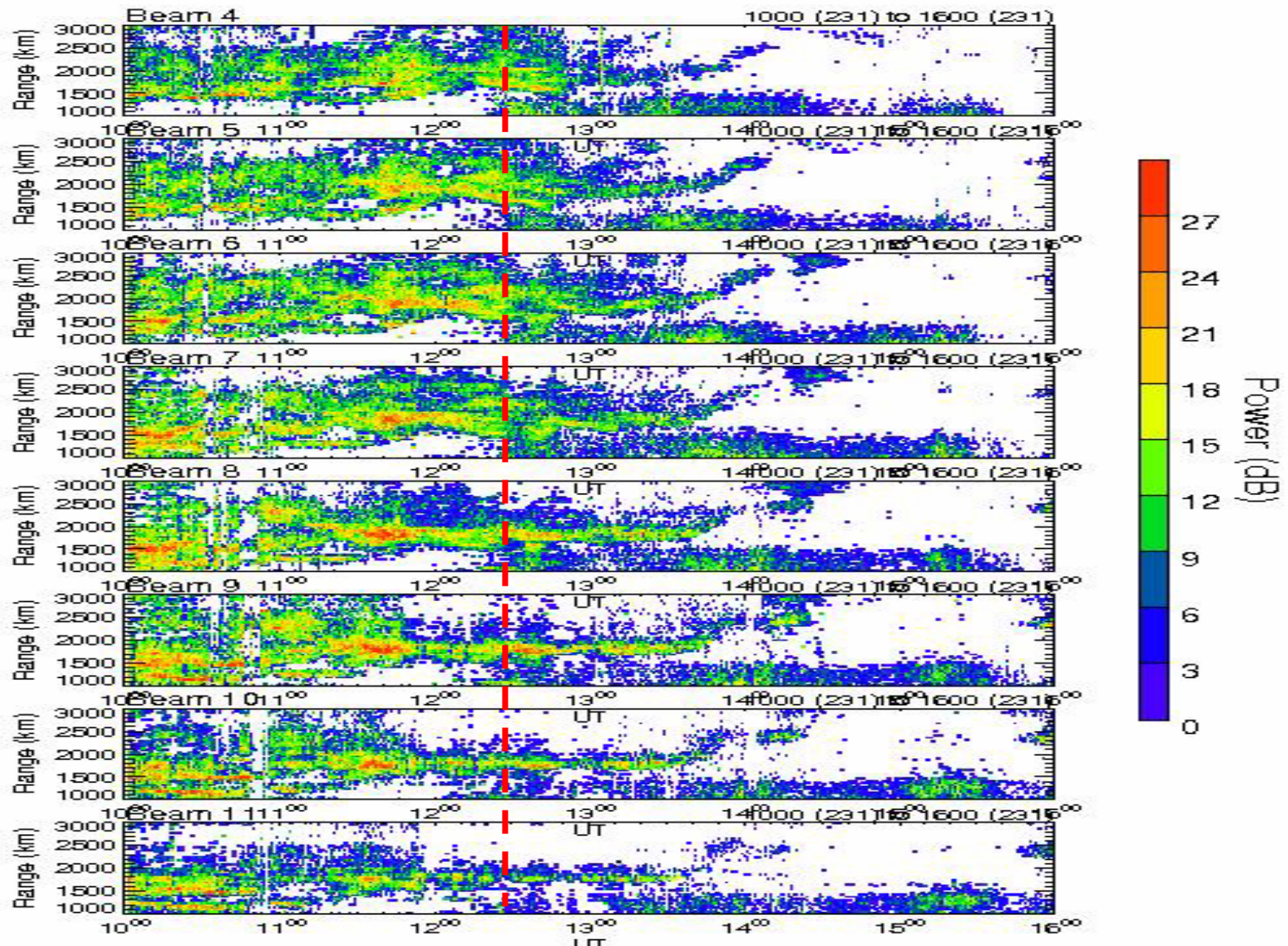


SUPERDARN PARAMETER PLOT

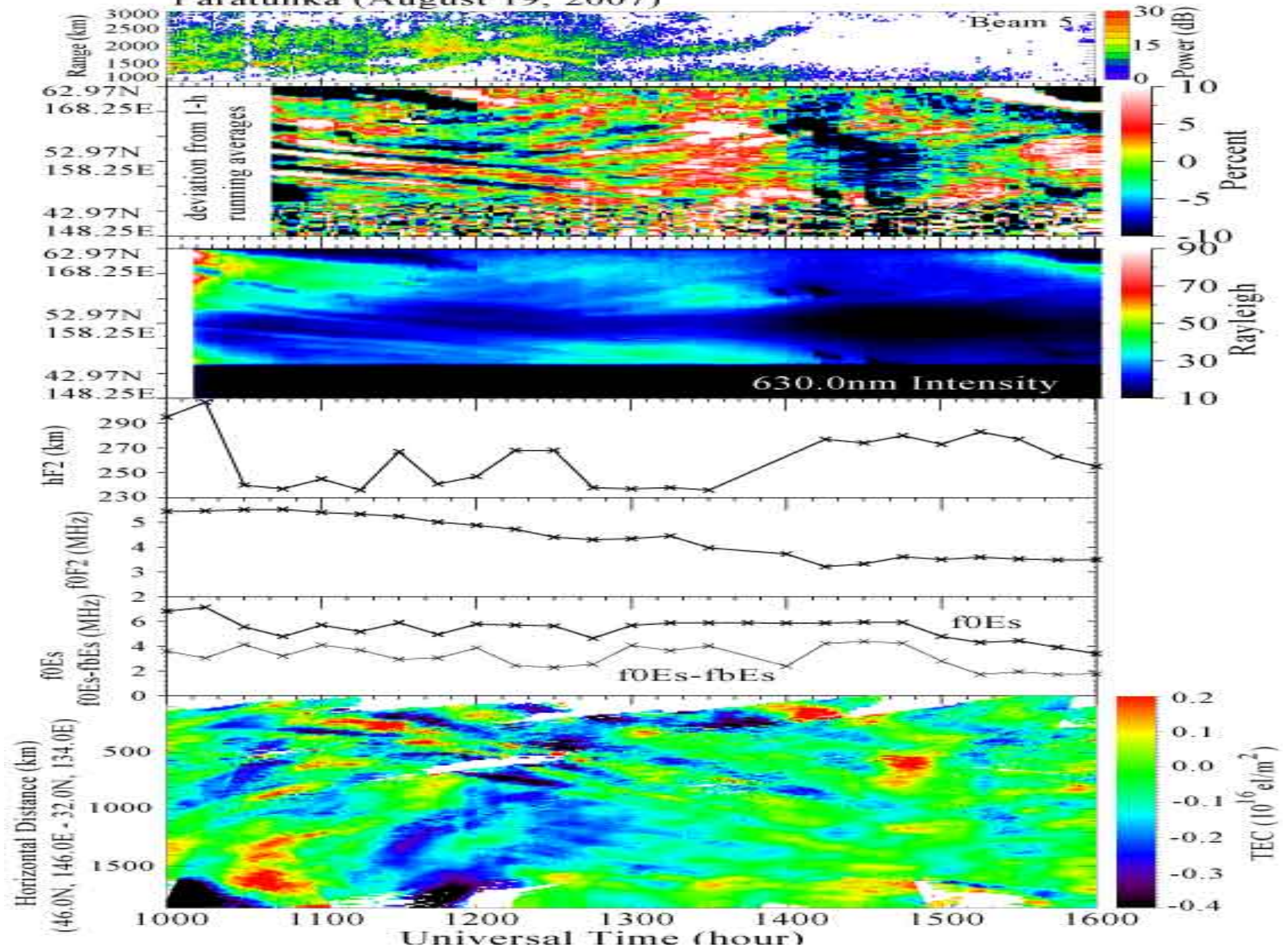
19 Aug 2007⁽²³¹⁾

Hokkaido: pwr_l

test normal (cw) scan mode (151)



Paratunka (August 19, 2007)



Summary

- ◆ Clear medium-scale TIDs (MSTIDs) were observed in the 630-nm airglow images on August 19, 2007 at Paratunka.
- ◆ The MSTIDs move **first southwestward**, but then move **back northeastward** in the northern part of the Paratunka image.
- ◆ These two motions can be also identified by SuperDARN Hokkaido radar, but not observed over Japan in GPS-TEC map.
- ◆ The backward motion of MSTIDs seems to be initiated by **F-layer height decrease**.
- ◆ The F-layer height decrease seems to **propagate from north to south**. This fact indicates that **poleward wind enhancement** (associated with large-scale TID?) caused the F-layer height decrease.
- ◆ These facts suggest that poleward wind enhancement caused the turning of the MSTID direction. How?