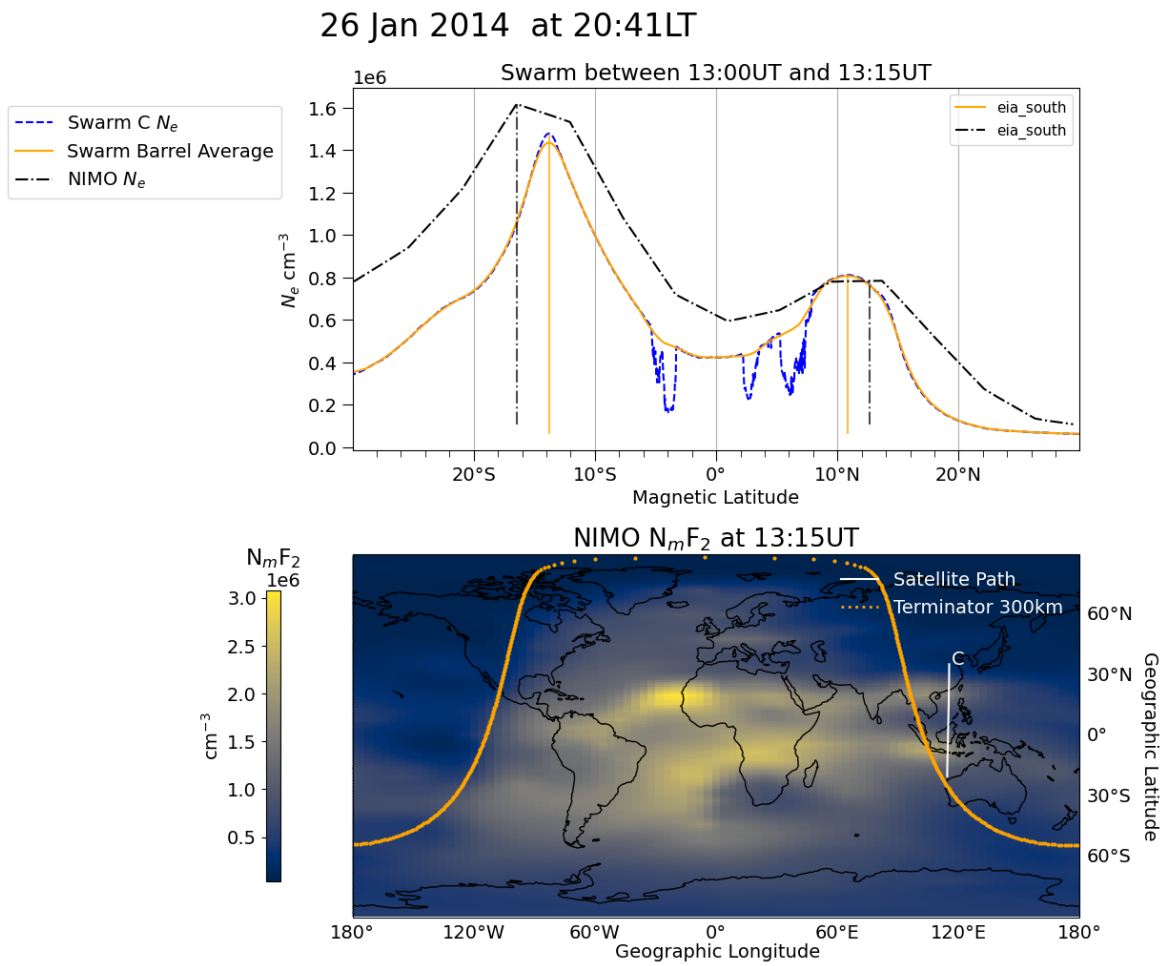
In [1]:
```
# Single NIMO Swarm Plot

import numpy as np
import matplotlib as mpl
import matplotlib.pyplot as plt
from datetime import datetime

from swarm_panel_ax import swarm_panel
from paper_plotting import nimo_swarm_single_plot
```

In [4]:
```
swarm_fdir = '/Users/aotoole/Documents/Python_Code/data/swarm_data'
nimo_fdir = '/Users/aotoole/Documents/Python_Code/data/NIMO/*'
sat = 'C'
stime = datetime(2014, 1, 26,13,0)
fig = nimo_swarm_single_plot(stime, sat, swarm_fdir, nimo_fdir, fosi =
fig.savefig(f'NIMO_Swarm{sat}_{stime.strftime('%Y%b%d_%H%M')}.png', fo
```



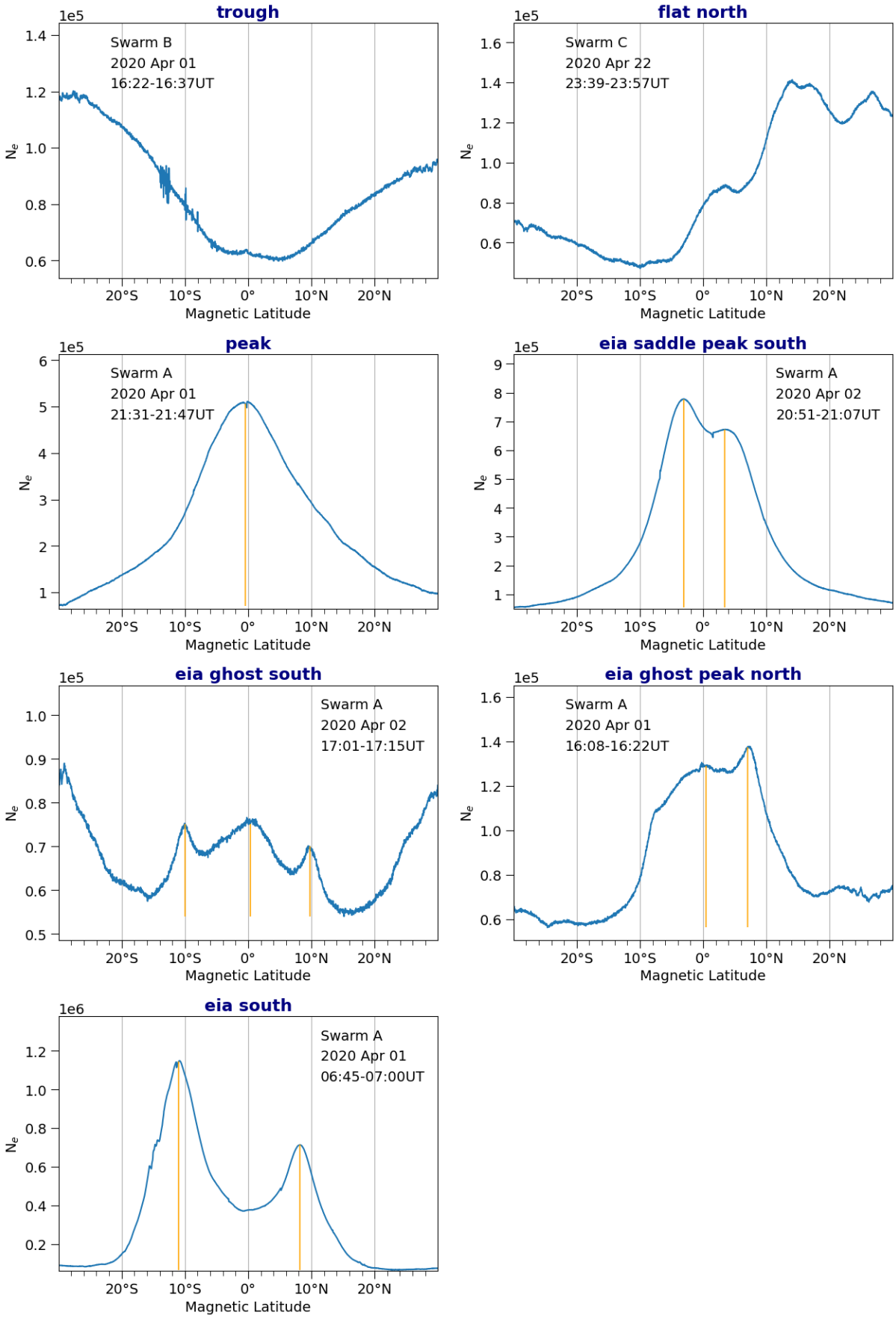
In [2]:
```
swarm_fdir = '~/swarm_data'

trough_time = datetime(2020, 4, 1, 16, 22)
trough_sat = 'B'

flat_time =  datetime(2020, 4, 22, 23, 39) # datetime(2020, 4, 2, 8, 9
```

```
flat_sat = 'C'  # 'B'

peak_time = datetime(2020, 4, 1, 21, 31)
peak_sat = 'A'

saddle_time = datetime(2020, 4, 2, 20, 51)
saddle_sat = 'A'

ghost_time = datetime(2020, 4, 2, 17, 1)
ghost_sat = 'A'

arm_ghost_time = datetime(2020, 4, 1, 16, 8)
arm_ghost_sat = 'A'

eia_classic_time = datetime(2020, 4, 1, 6, 45)
eia_sat = 'A'
```

In [3]:

```
fig = plt.figure(figsize=(15, 20))
fo = 14
plt.rcParams.update({'font.size': fo})
fig.subplots_adjust(bottom=.03, top=.9, hspace=0.3)
lim_all = [0, 70]
# PLOT SWARM ----------------------------------------
# Trough
ax1 = fig.add_subplot(4, 2, 1)
swarm_panel(ax1, trough_time, trough_sat, swarm_file_dir=swarm_fdir)
#ax1.legend(loc='upper right')
#ax1.set_ylim(lim_all)

# Flat
ax2 = fig.add_subplot(4, 2, 2)
swarm_panel(ax2, flat_time, flat_sat, swarm_file_dir=swarm_fdir)
#ax2.set_ylim(lim_all)

# Peak
ax3 = fig.add_subplot(4, 2, 3)
swarm_panel(ax3, peak_time, peak_sat, swarm_file_dir=swarm_fdir)
#ax3.set_ylim(lim_all)

# Peak
ax4 = fig.add_subplot(4, 2, 4)
swarm_panel(ax4, saddle_time, saddle_sat, swarm_file_dir=swarm_fdir)
#ax4.set_ylim(lim_all)

# Peak
ax5 = fig.add_subplot(4, 2, 5)
swarm_panel(ax5, ghost_time, ghost_sat, swarm_file_dir=swarm_fdir)
#ax5.set_ylim(lim_all)

# Peak
ax6 = fig.add_subplot(4, 2, 6)
swarm_panel(ax6, arm_ghost_time, arm_ghost_sat, swarm_file_dir=swarm_f
```

```
#ax6.set_ylim(lim_all)

# Peak
ax7 = fig.add_subplot(4, 2, 7)
swarm_panel(ax7, eia_classic_time, eia_sat, swarm_file_dir=swarm_fdir)
#ax7.set_ylim(lim_all)

fig.savefig('type_summary_plot.png', format='png')
```


trough
Swarm B
2020 Apr 01
16:22-16:37UT
flat north
Swarm C
2020 Apr 22
23:39-23:57UT
peak
Swarm A
2020 Apr 01
21:31-21:47UT
eia saddle peak south
Swarm A
2020 Apr 02
20:51-21:07UT
eia ghost south
Swarm A
2020 Apr 02
17:01-17:15UT
eia ghost peak north
Swarm A
2020 Apr 01
16:08-16:22UT
eia south
Swarm A
2020 Apr 01
06:45-07:00UT
Magnetic Latitude
20°S
10°S
0°
10°N
20°N

In [7]:

In [ ]: