On the radiation belt location in the 23 – 24 solar cycles

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Set SW. Solar wind and geomagnetic conditions for the quiet days. Panels from top to bottom: solar wind bulk velocity V; solar wind dynamic pressure Pd; interplanetary magnetic field magnitude B (blue dotted curve) and Bz component (black solid curve); auroral electrojet index AE; storm-time *Dst* index. The day on June, indicated by vertical red dashed lines, is very quite in the solar wind and geomagnetic parameters.
Upstream solar wind data are acquired from Wind upstream monitor (https://cdaweb.sci.gsfc.nasa.gov/index.html/)
Geomagnetic parameters AE and Dst are provided by Kyoto WDC
(http://wdc.kugi.kyoto-u.ac.jp/wdc/Sec3.html)

Set map030. Geographic maps of averaged electron fluxes with energies >30 keV and pitch angles of ~90° observed during quiet days by POES satellites at height of ~850 km in 2 hour vicinity of local noon. The solid wide curve indicates the geomagnetic equator. The outer and inner electron belts and a slot region between them are clearly seen, respectively, at high and middle latitudes in the longitudinal range from ~90° E to ~80°W.
The POES data are provided by NOAA (https://www.ngdc.noaa.gov/stp/satellite/poes/dataaccess.html)

Set map100. Geographic maps of averaged electron fluxes with energies >100 keV and pitch angles of ~90° observed quiet days by POES satellites at height of ~850 km in 2 hour vicinity of local noon. The solid wide curve indicates the geomagnetic equator. The outer and inner electron belts and a slot region between them are clearly seen, respectively, at high and middle latitudes in the longitudinal range from ~90° E to ~80°W.
The POES data are provided by NOAA (https://www.ngdc.noaa.gov/stp/satellite/poes/dataaccess.html)

Set map300. Geographic maps of averaged electron fluxes with energies >300 keV and pitch angles of ~90° observed quiet days by POES satellites at height of ~850 km in 2 hour vicinity of local noon. The solid wide curve indicates the geomagnetic equator. The outer electron belt is clearly seen at high latitudes.
The POES data are provided by NOAA (https://www.ngdc.noaa.gov/stp/satellite/poes/dataaccess.html)

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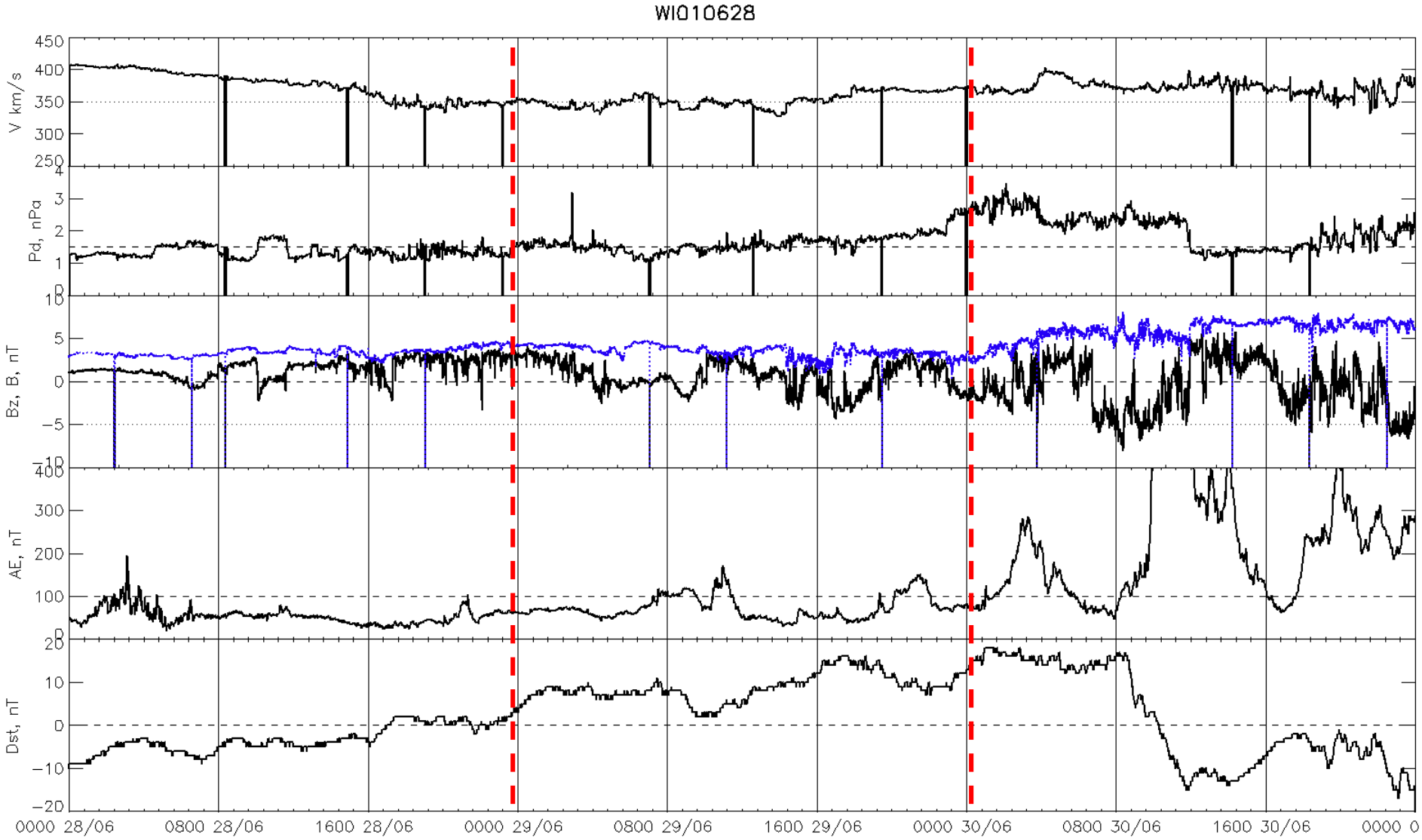
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Bz, B, nT
AE, nT
Dst, nT
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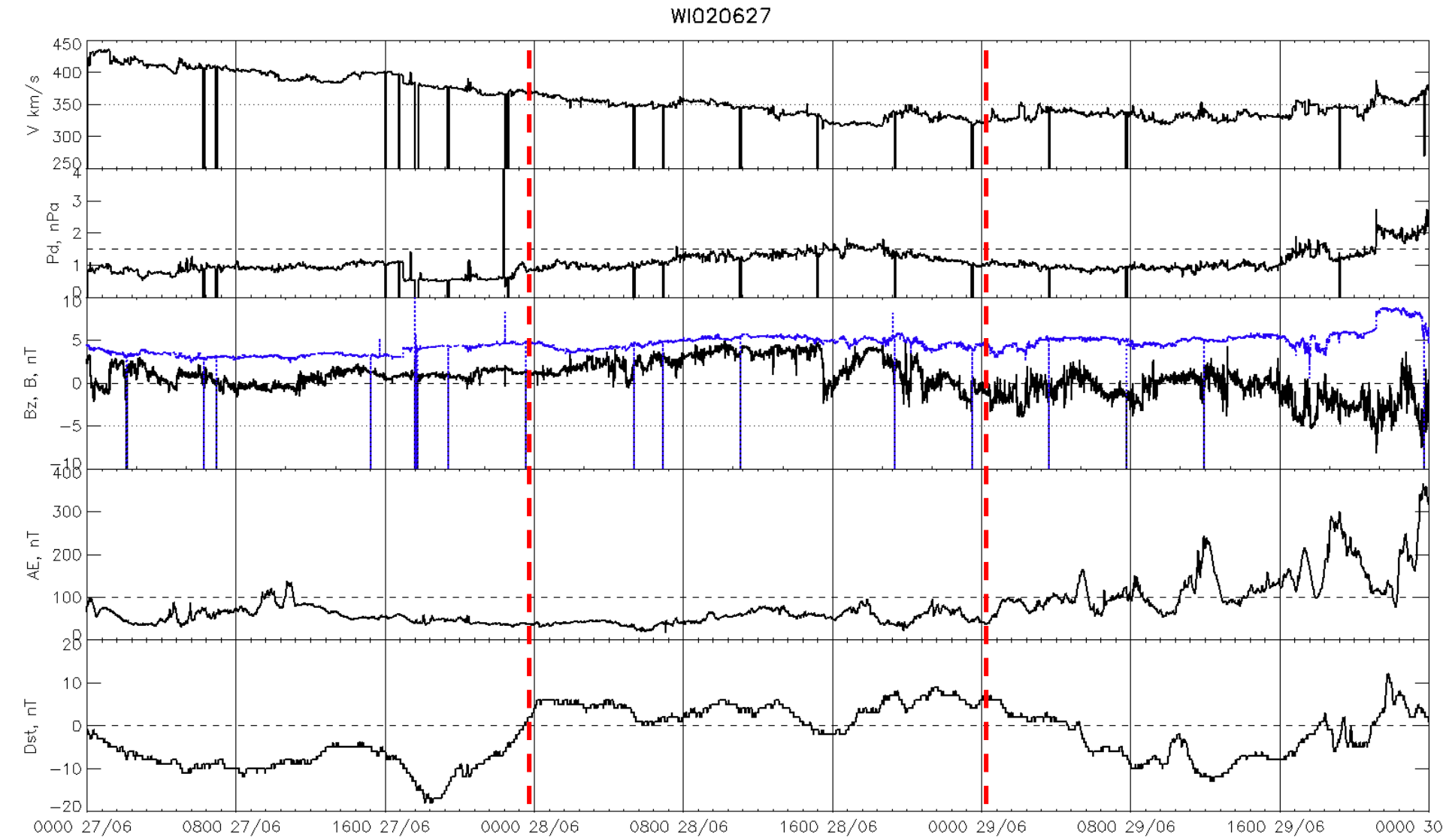
0000 29/06
0800 29/06
1600 29/06
0000 30/06
0800 30/06
1600 30/06
0000 01

Set SW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Pd, nPa
Bz, B, nT
AE, nT
Dst, nT
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1600 28/06
0000 29/06
0800 29/06
1600 29/06
0000 30

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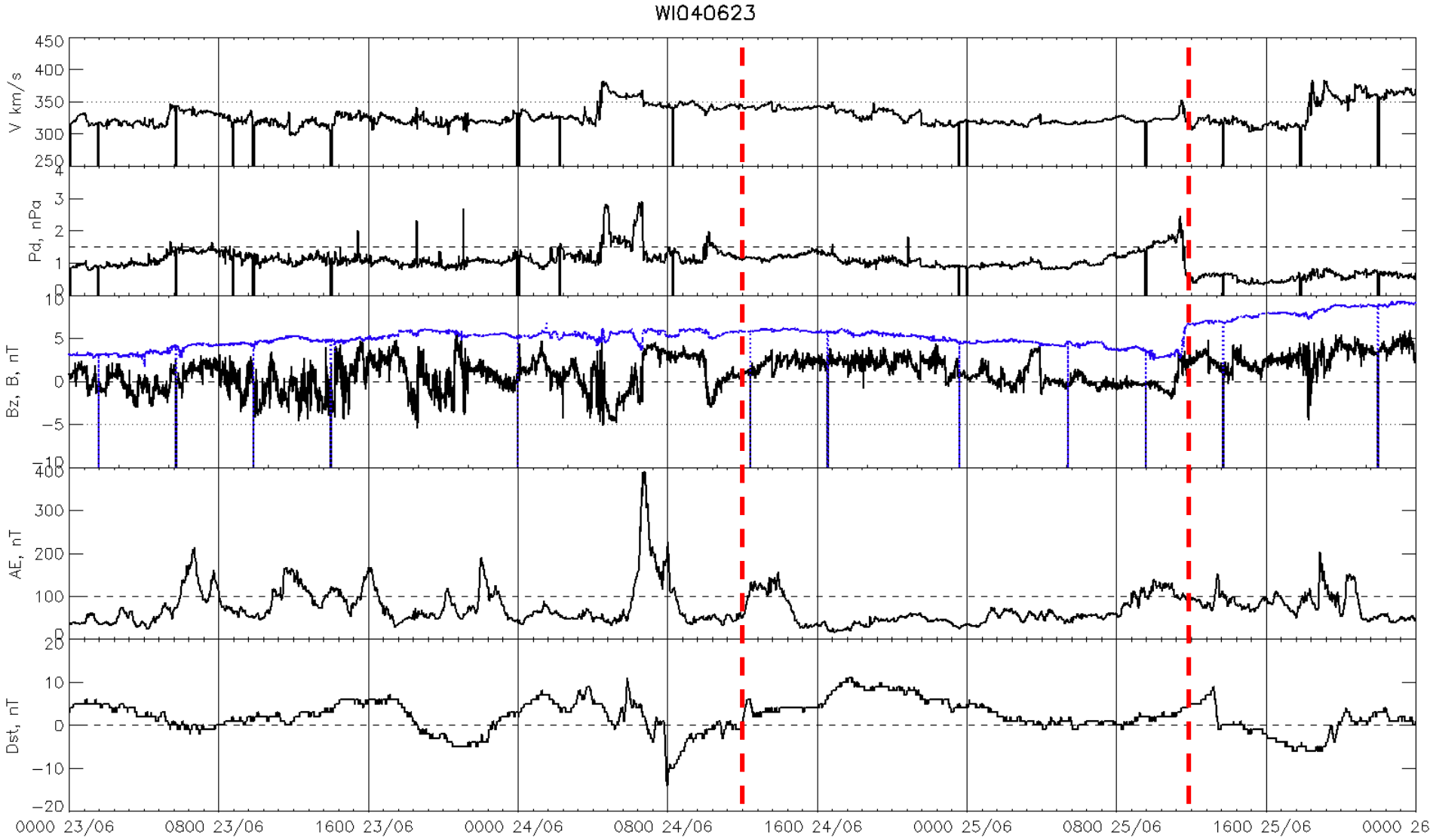
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AE, nT
Dst, nT
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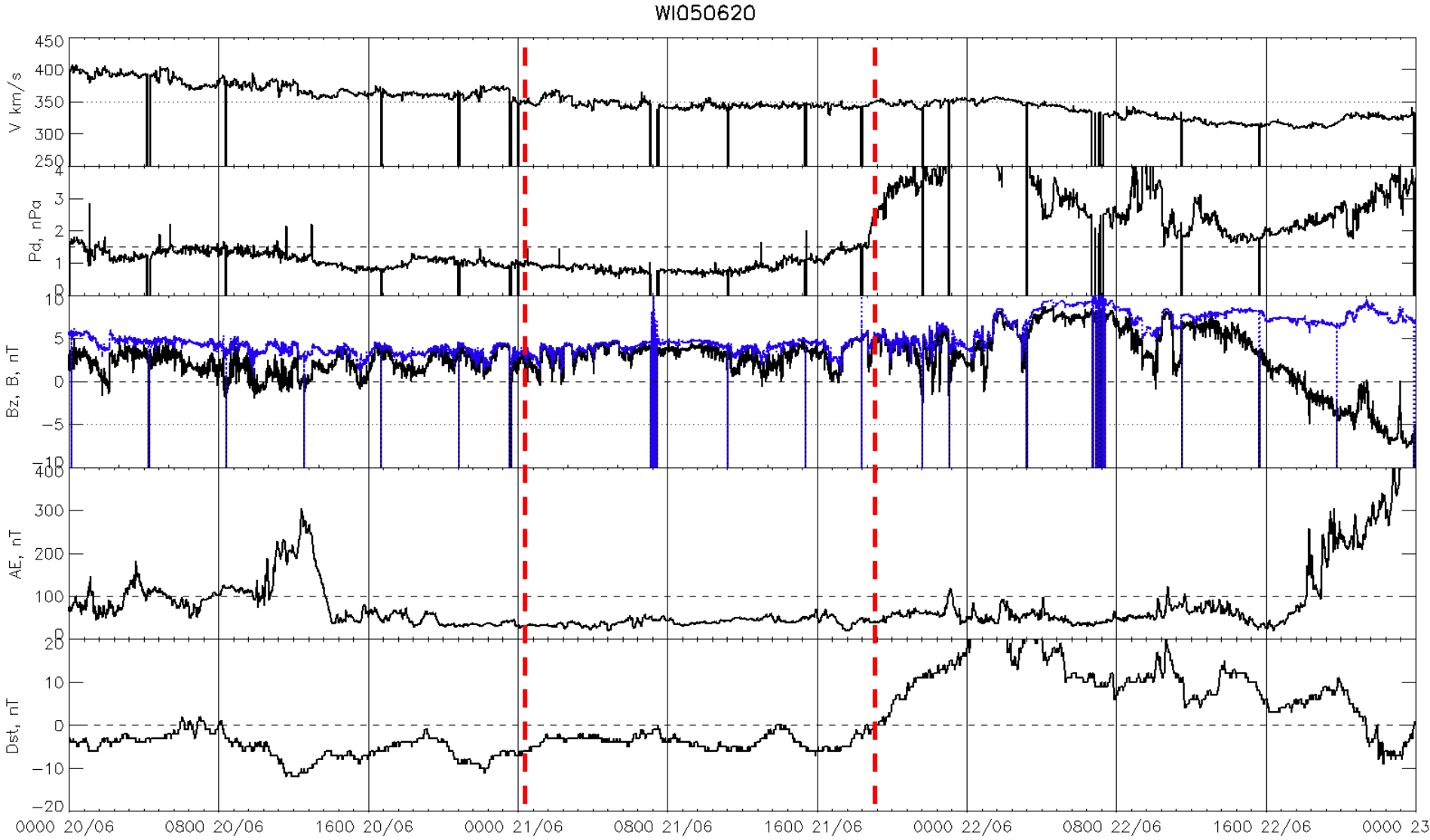
0000 24/06
0800 24/06
1600 24/06
0000 25/06
0800 25/06
1600 25/06
0000 26

Set SW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Bz, B, nT
AE, nT
Dst, nT
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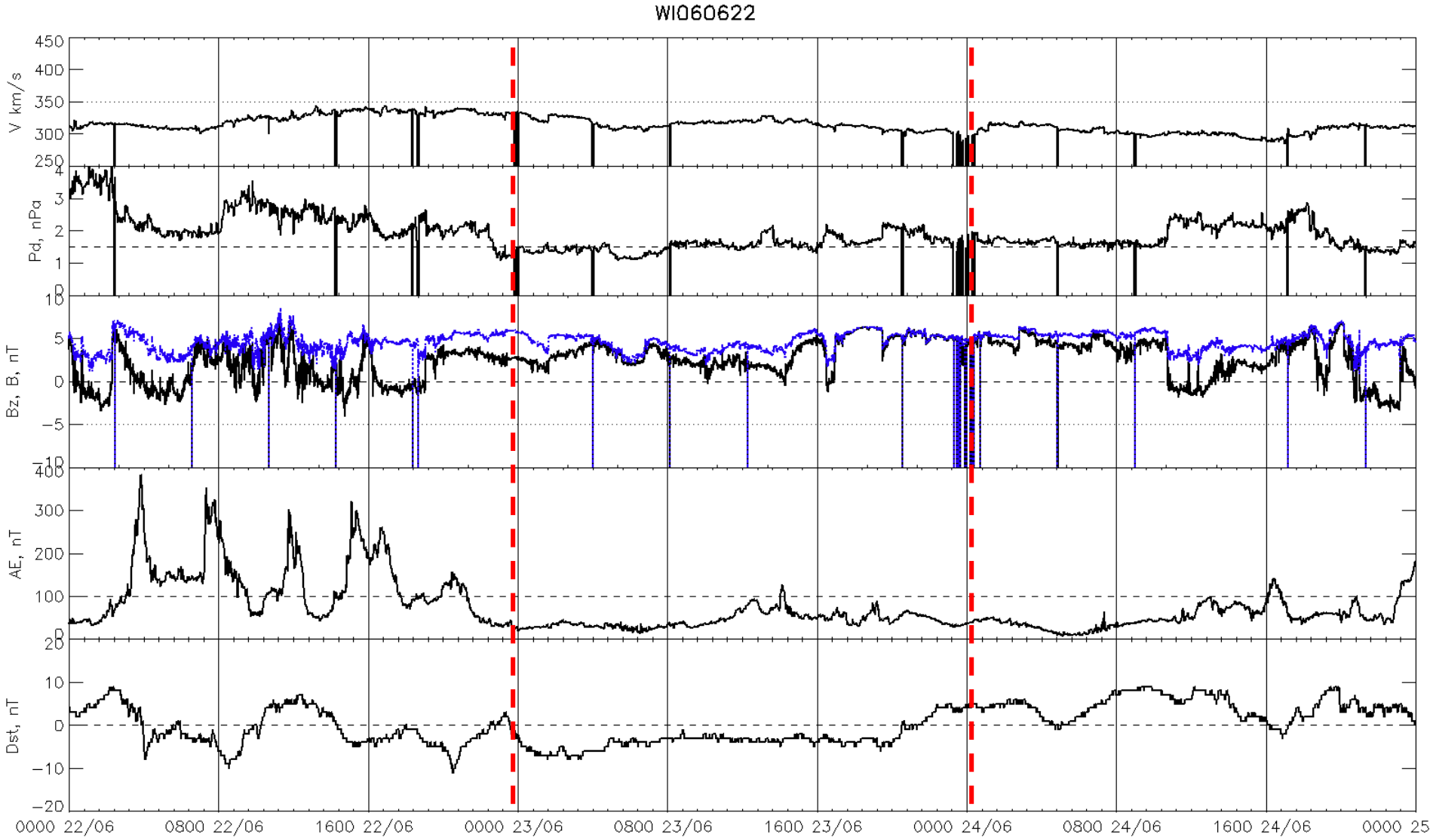
0000 21/06
0800 21/06
1600 21/06
0000 22/06
0800 22/06
1600 22/06
0000 23

Set SW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Pd, nPa
Bz, B, nT
AE, nT
Dst, nT
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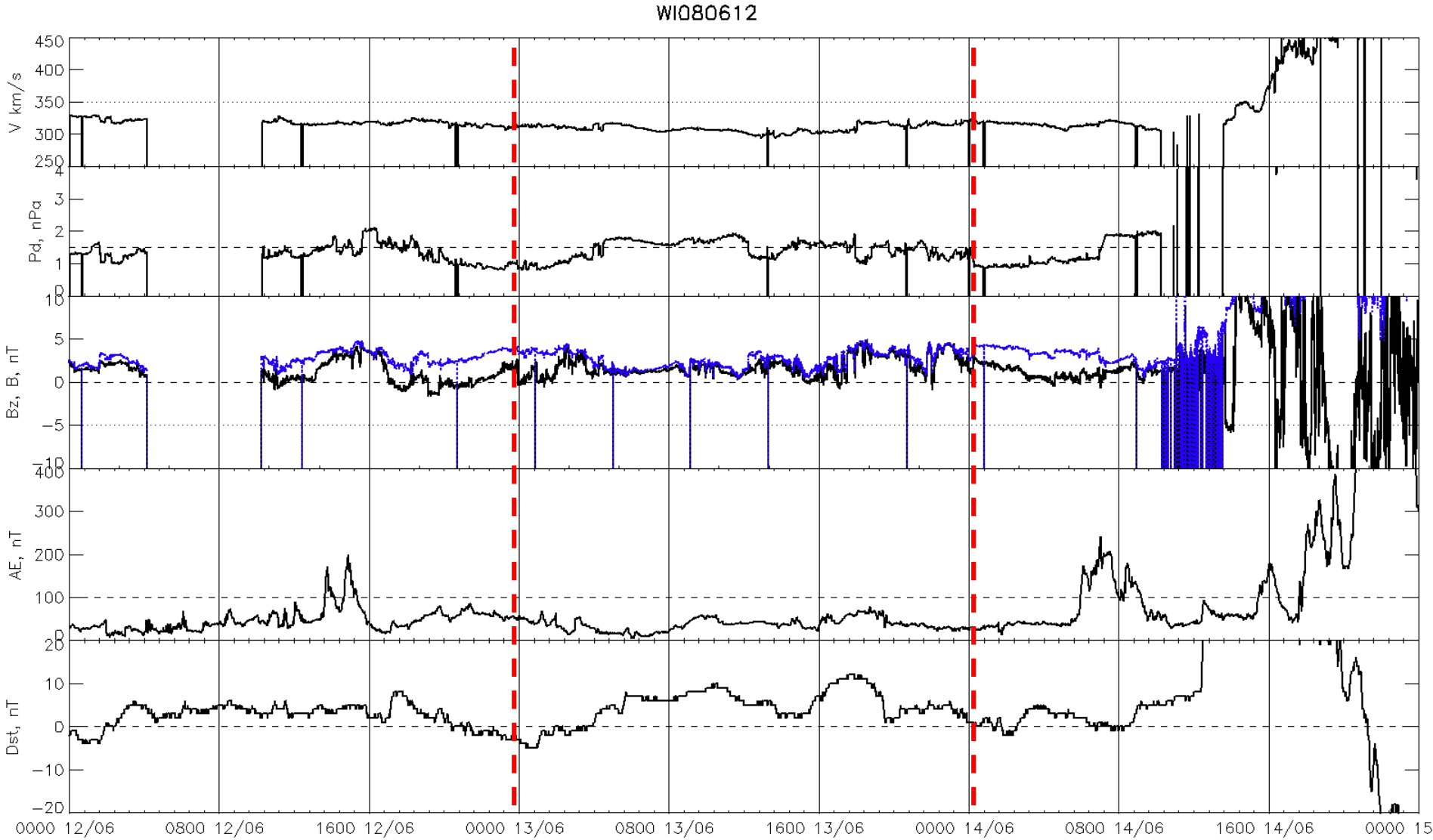
0000 23/06
0800 23/06
1600 23/06
0000 24/06
0800 24/06
1600 24/06
0000 25

Set SW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AE, nT
Dst, nT
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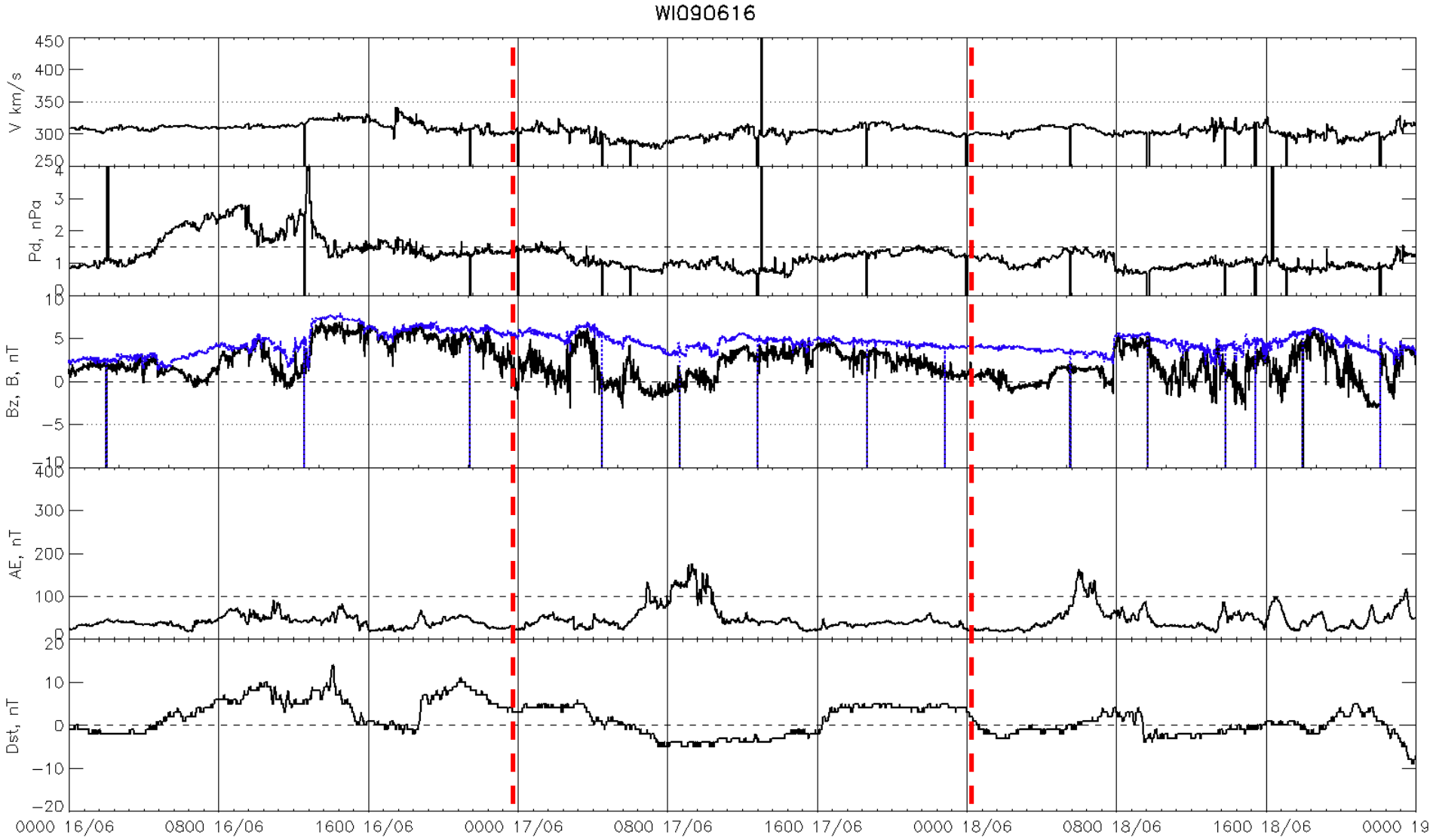
0800 14/06
1600 14/06
0000 15

Set SW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AE, nT
Dst, nT
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0800 17/06
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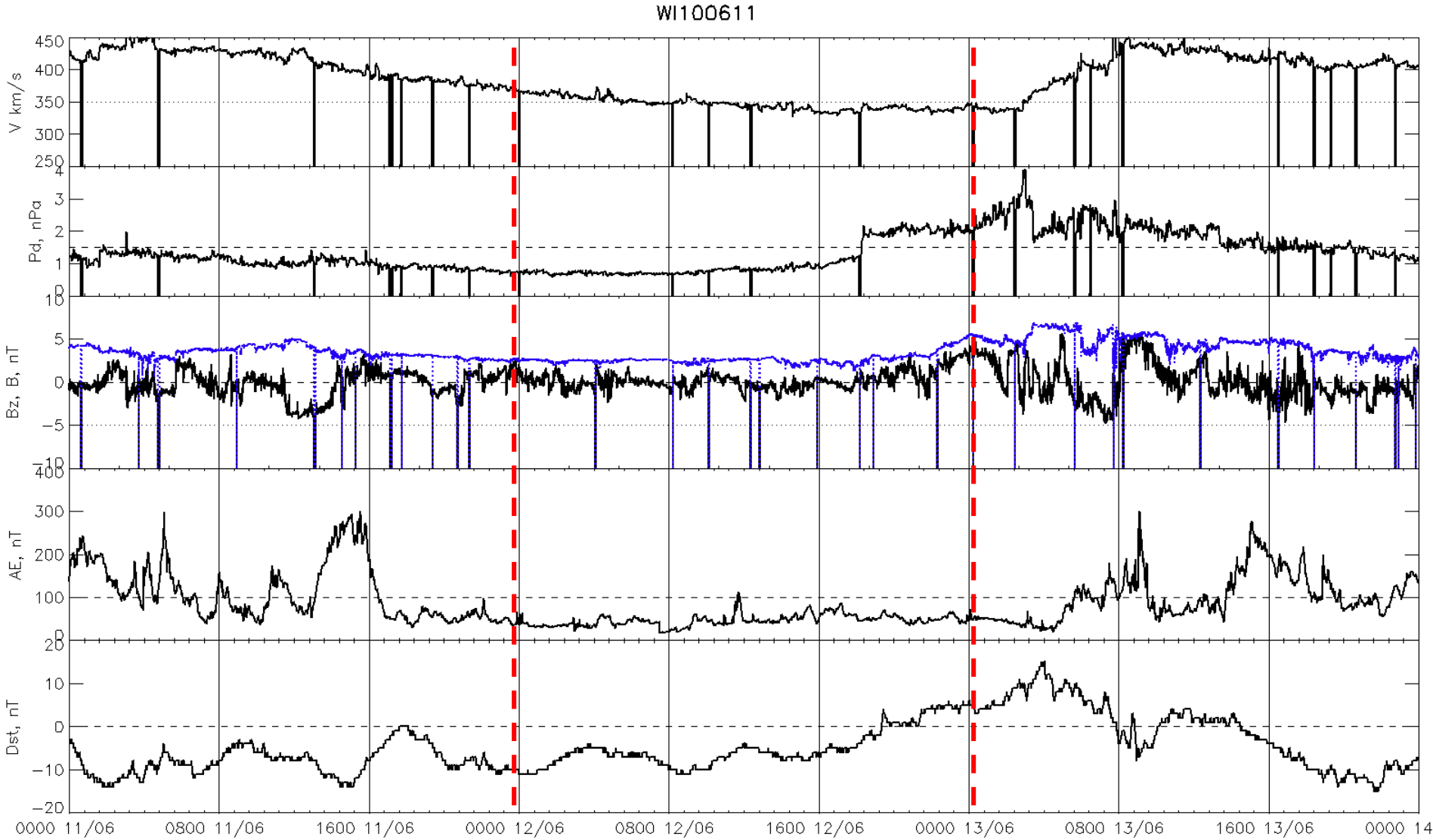
0000 18/06
0800 18/06
1600 18/06

Set SW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AE, nT
Dst, nT
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0000 12/06
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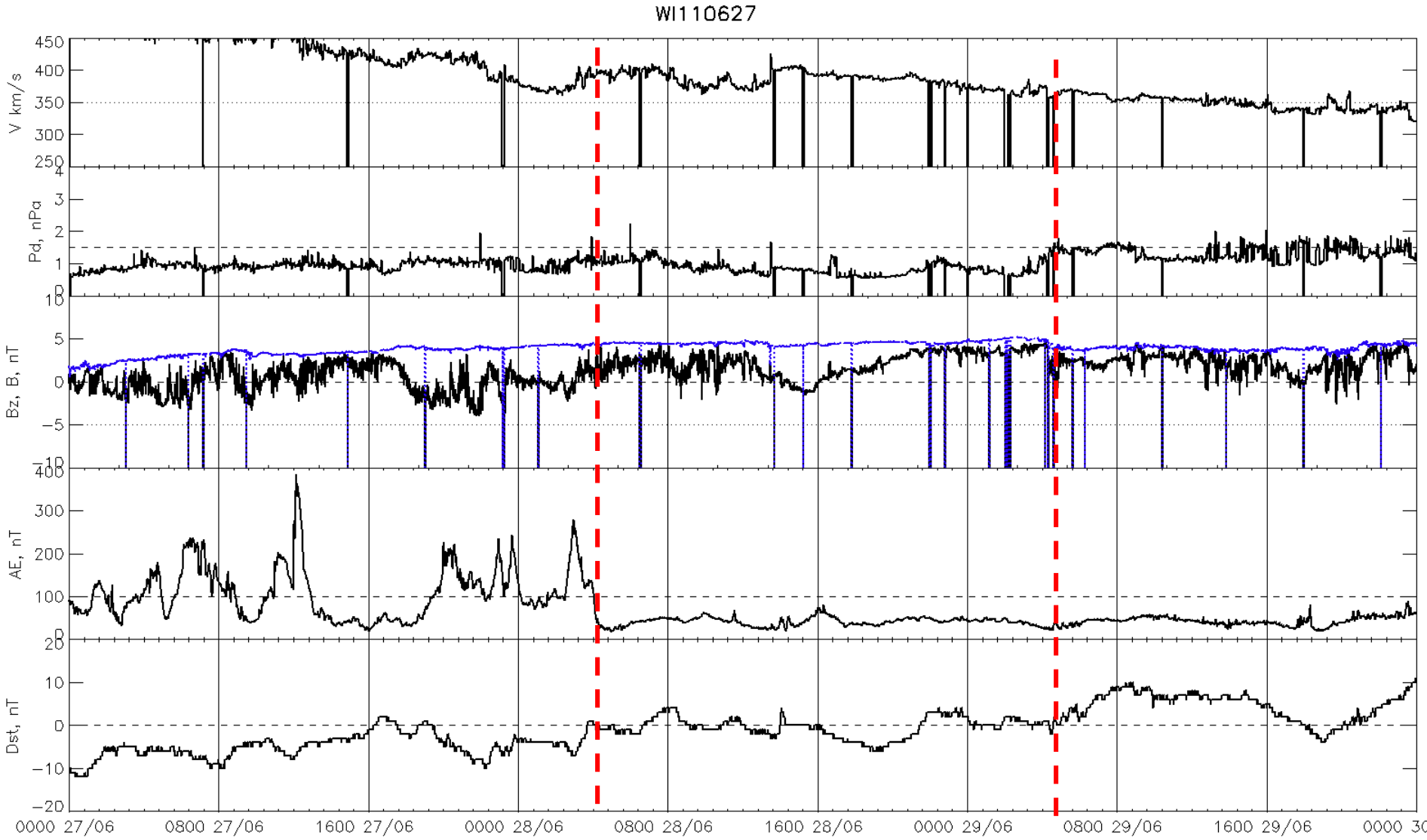
1600 12/06
0000 13/06
0800 13/06
1600 13/06
0000 14

Set SW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V km/s
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400
350
300
250
Pd, nPa
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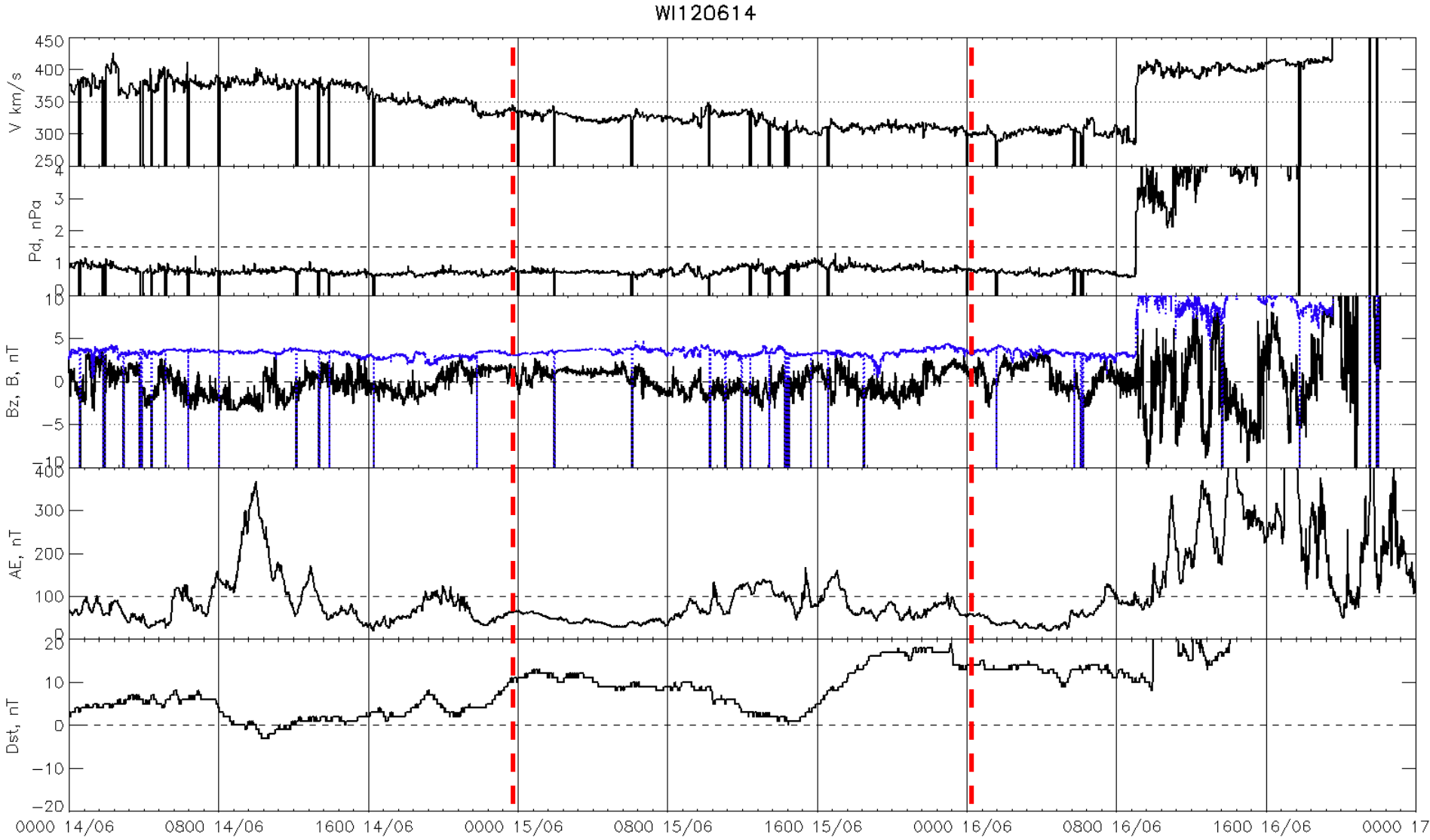
3
2
1
0
Bz, B, nT
10
5
0
−5
−10
AE, nT
400
300
200
100
0
Dst, nT
20
10
0
−10
−20
0000 27/06
0800 27/06
1600 27/06
0000 28/06
0800 28/06
1600 28/06
0000 29/06
0800 29/06
1600 29/06
0000 30

Set SW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Pd, nPa
Bz, B, nT
AE, nT
Dst, nT
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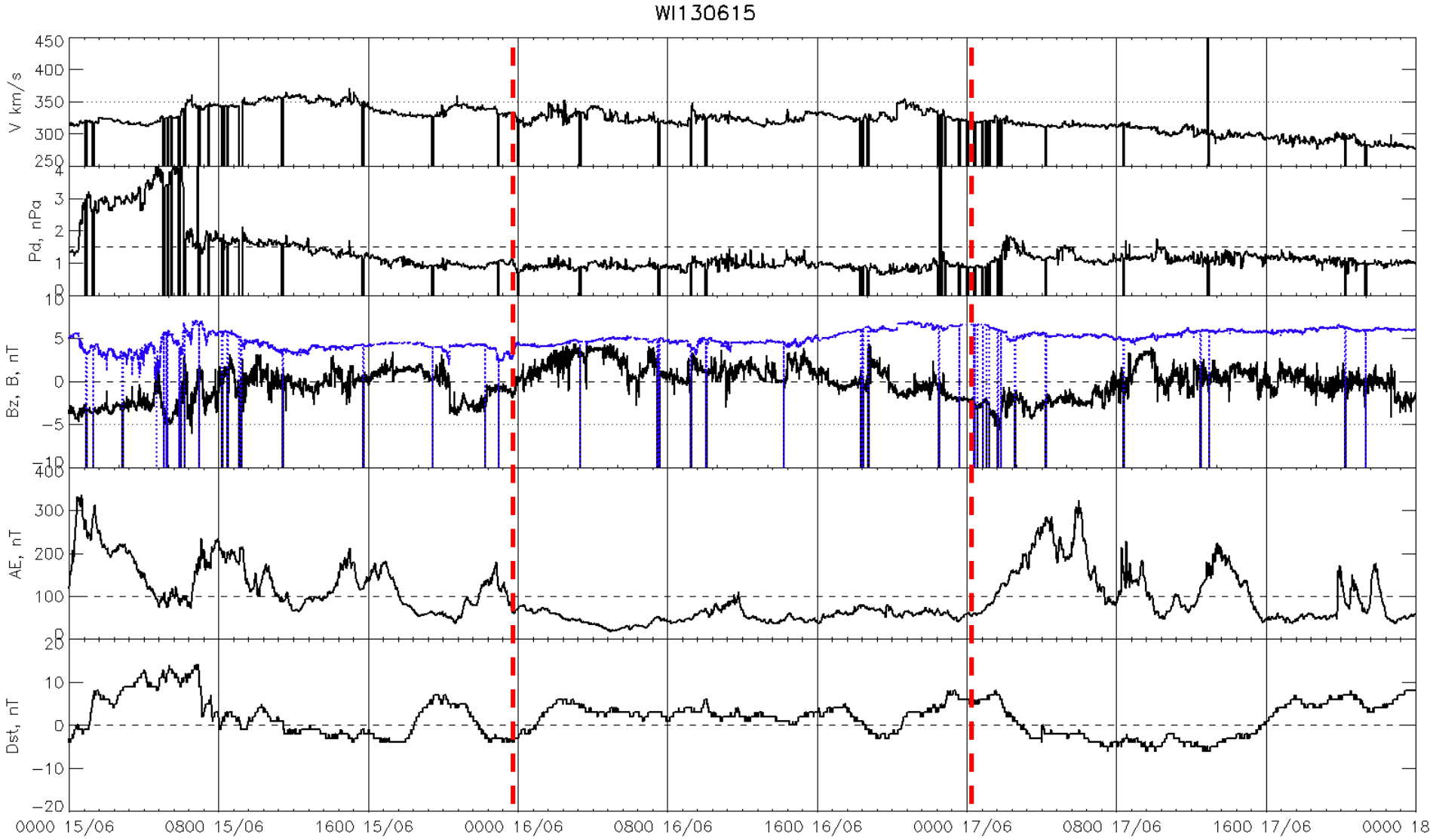
0000 15/06
0800 15/06
1600 15/06
0000 16/06
0800 16/06
1600 16/06
0000 17

Set SW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Pd, nPa
Bz, B, nT
AE, nT
Dst, nT
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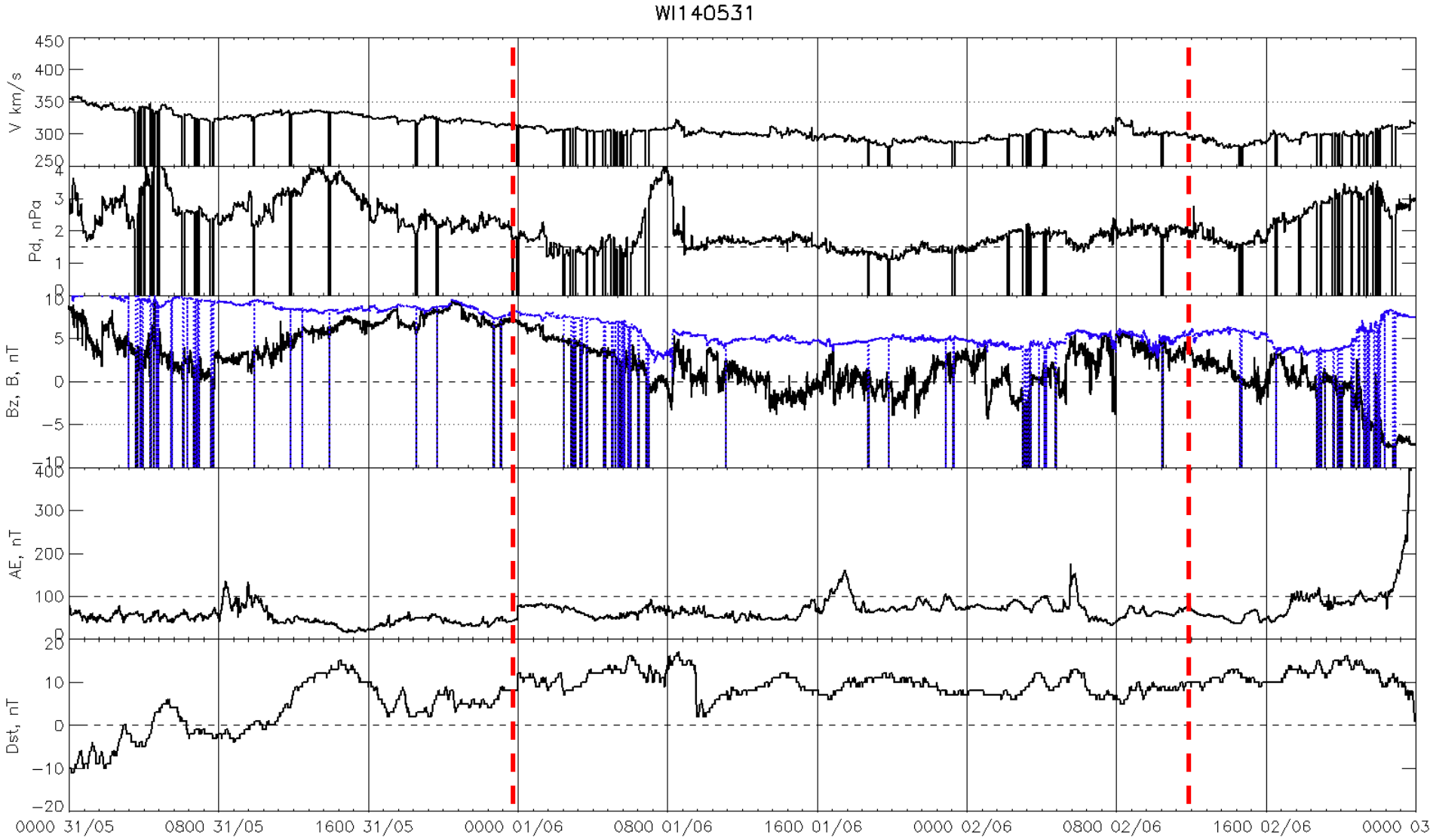
0000 16/06
0800 16/06
1600 16/06
0000 17/06
0800 17/06
1600 17/06
0000 18

Set SW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Pd, nPa
Bz, B, nT
AE, nT
Dst, nT
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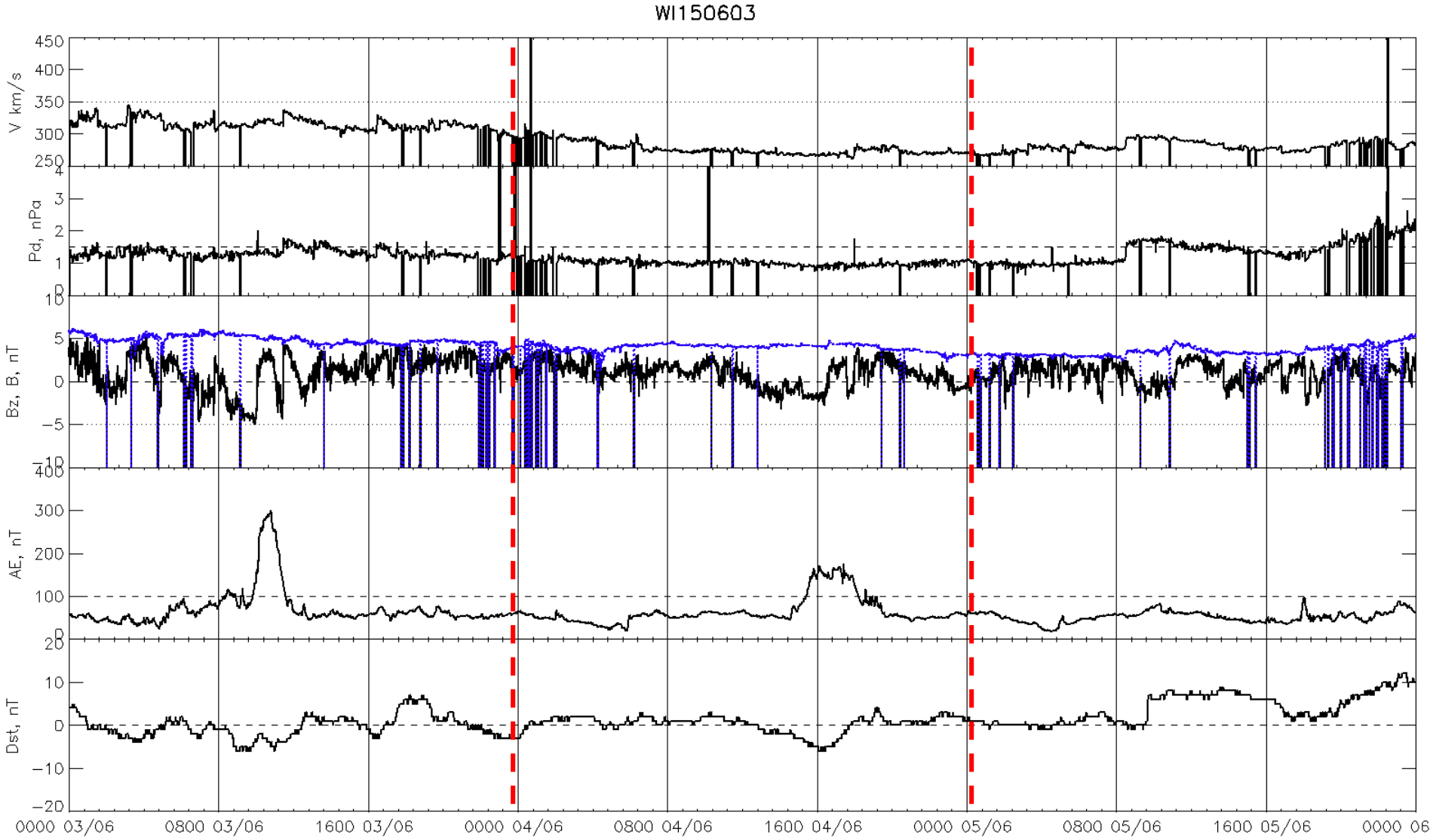
0000 01/06
0800 01/06
1600 01/06
0000 02/06
0800 02/06
1600 02/06
0000 03

Set SW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V km/s
Pd, nPa
Bz, B, nT
AE, nT
Dst, nT
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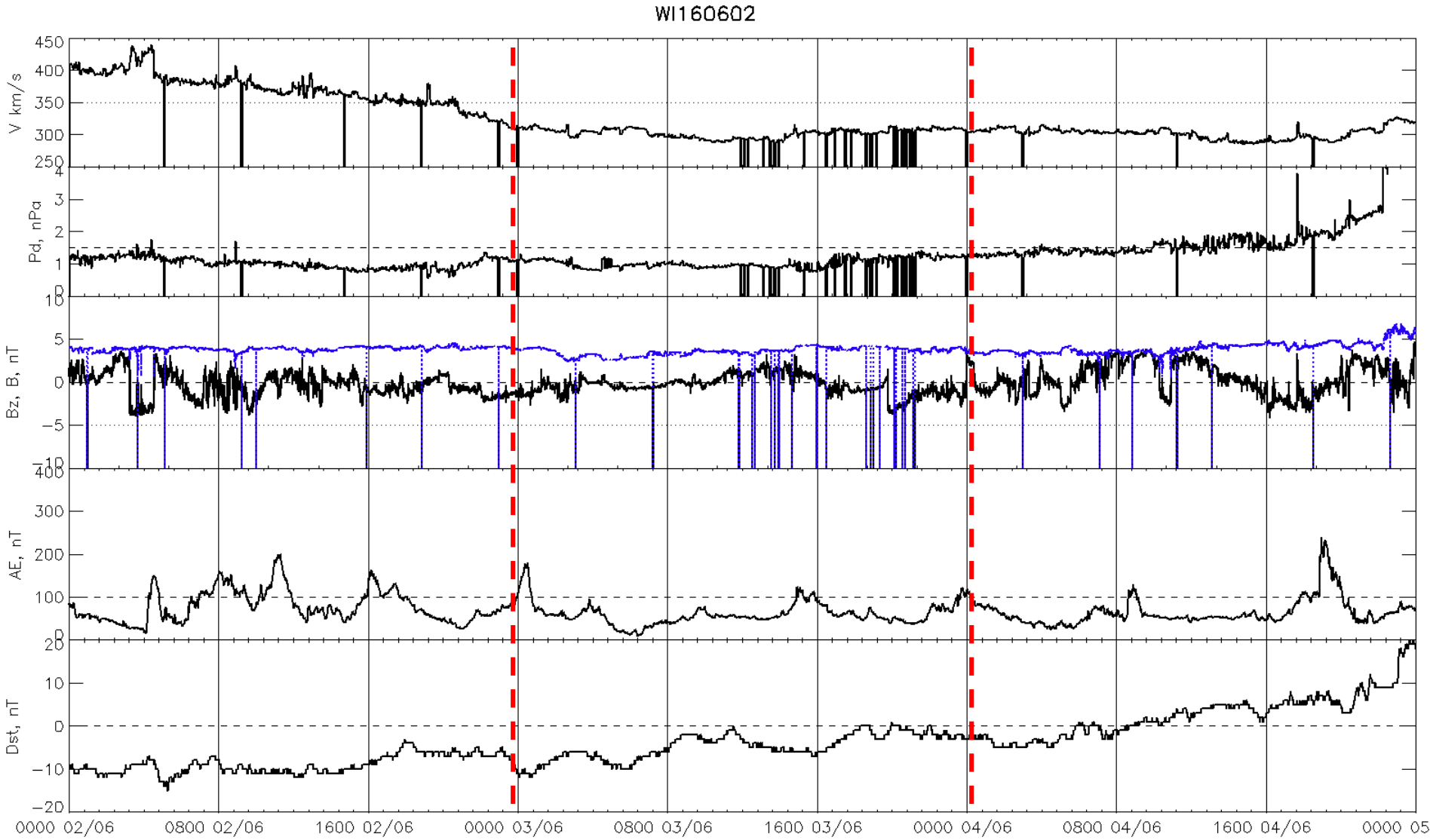
0000 04/06
0800 04/06
1600 04/06
0000 05/06
0800 05/06
1600 05/06
0000 06

Set SW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V km/s
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300
250
Pd, nPa
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3
2
1
0
Bz, B, nT
10
5
0
−5
−10
AE, nT
400
300
200
100
0
Dst, nT
20
10
0
−10
−20
0000 02/06
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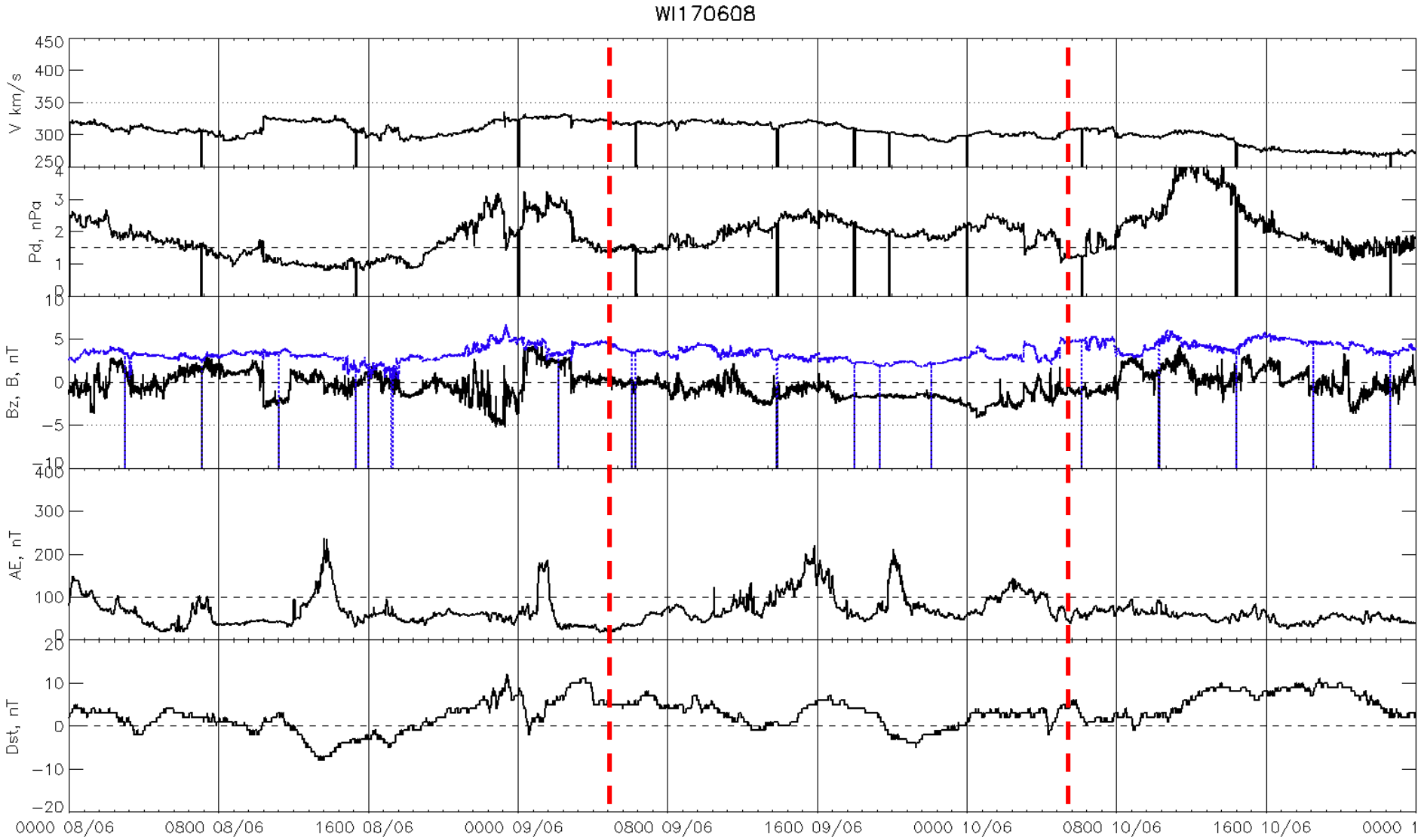
0000 05

Set SW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Pd, nPa
Bz, B, nT
AE, nT
Dst, nT
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0000 09/06
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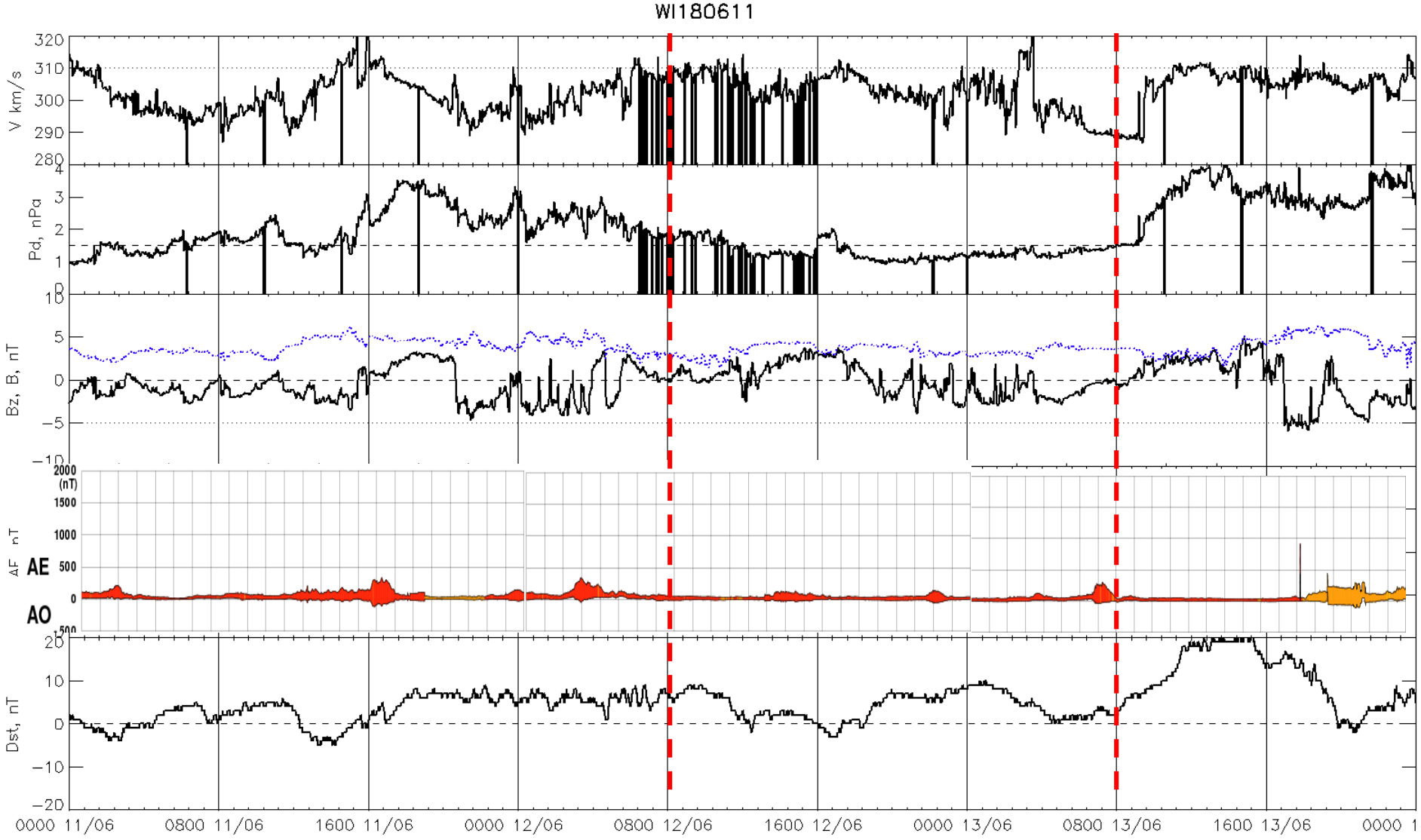
1600 09/06
0000 10/06
0800 10/06
1600 10/06
0000 11

Set SW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310
300
290
280
Pd, nPa
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3
2
1
0
Bz, B, nT
10
5
0
−5
−10
AE
AO
2000
(nT)
1500
1000
500
0
−500
Dst, nT
20
10
0
−10
−20
0000 11/06
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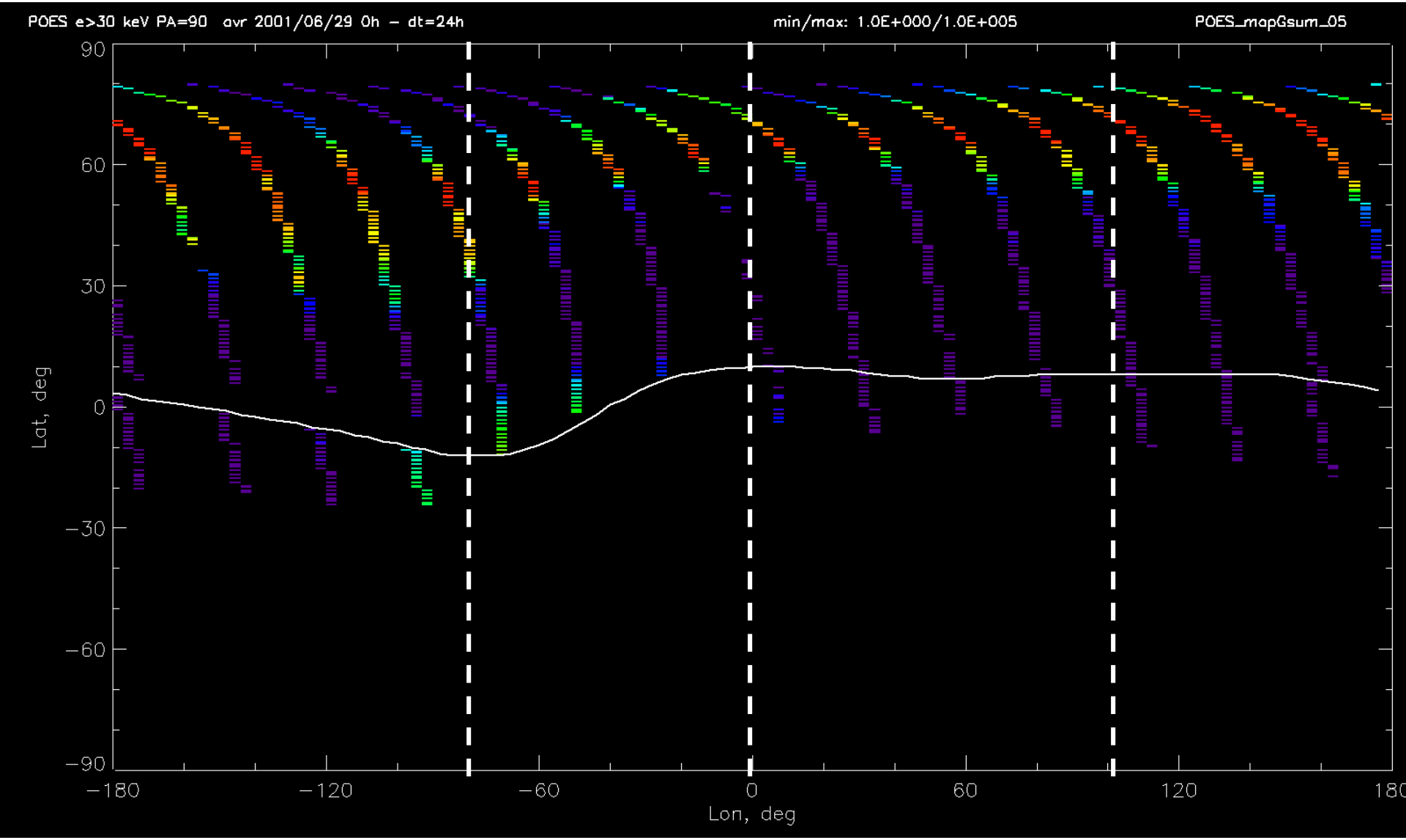
0800 13/06
1600 13/06
0000 14

Set map030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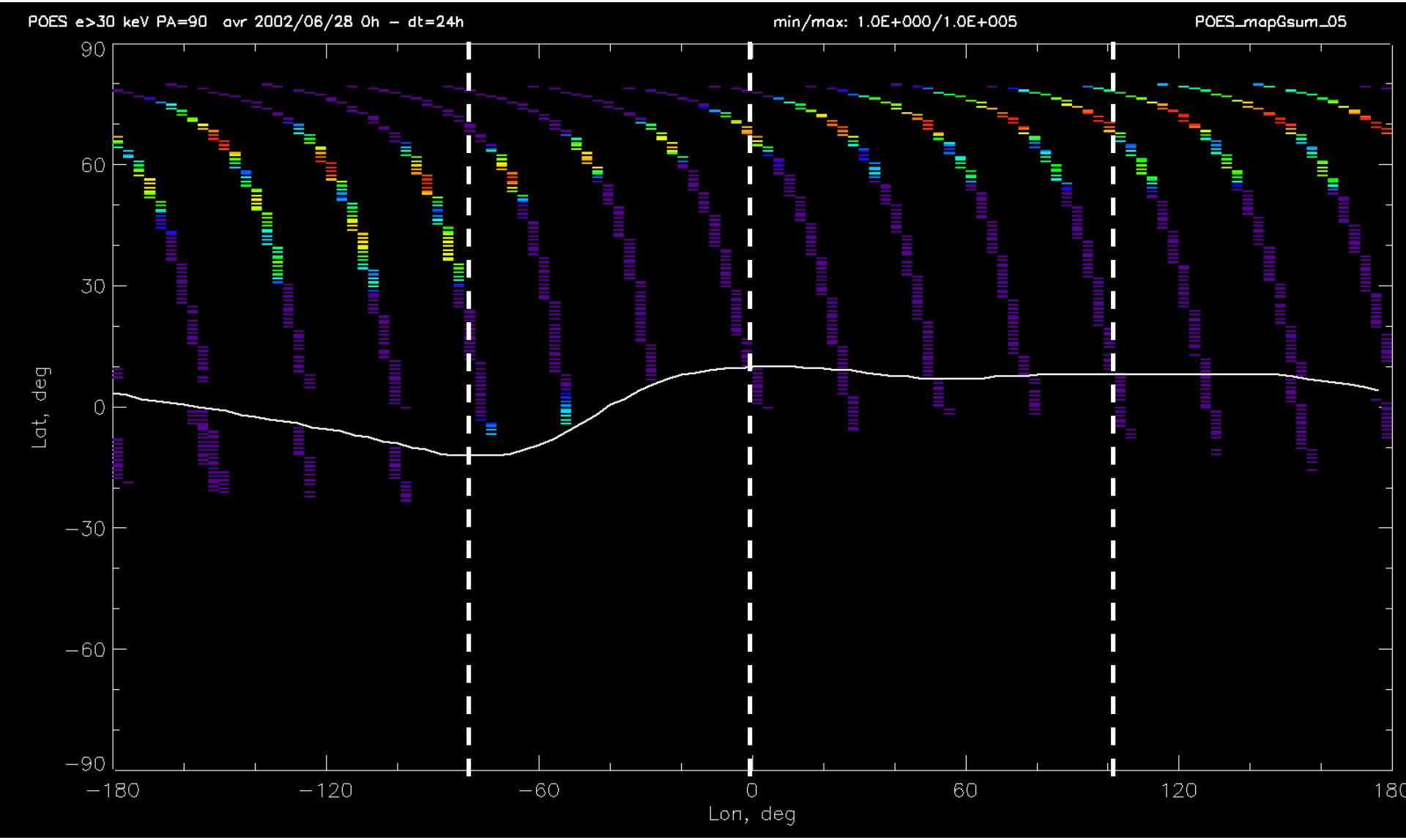
Lon, deg

Set map030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Lat, deg
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0
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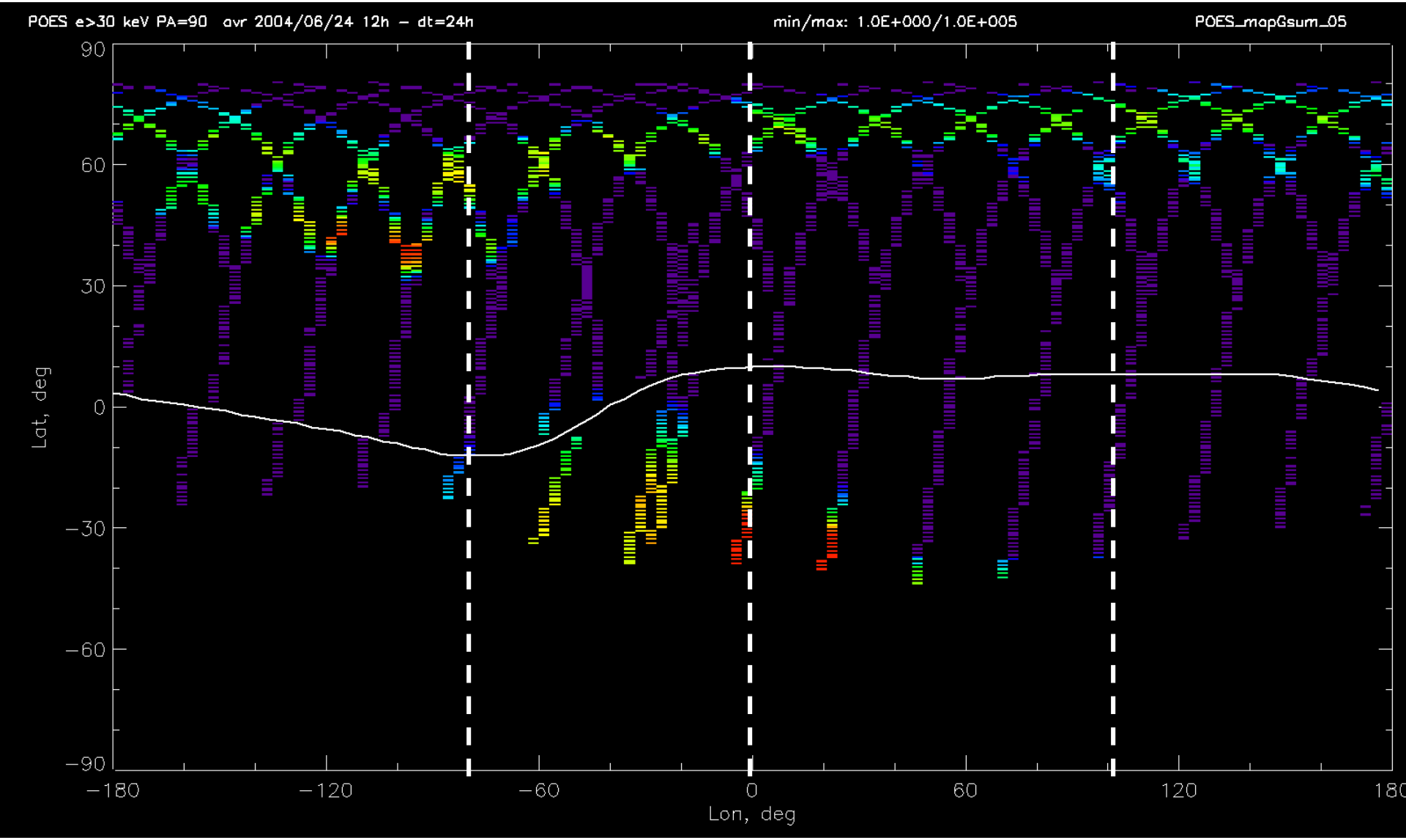
180
Lon, deg

Set map030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Lat, deg
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0
60
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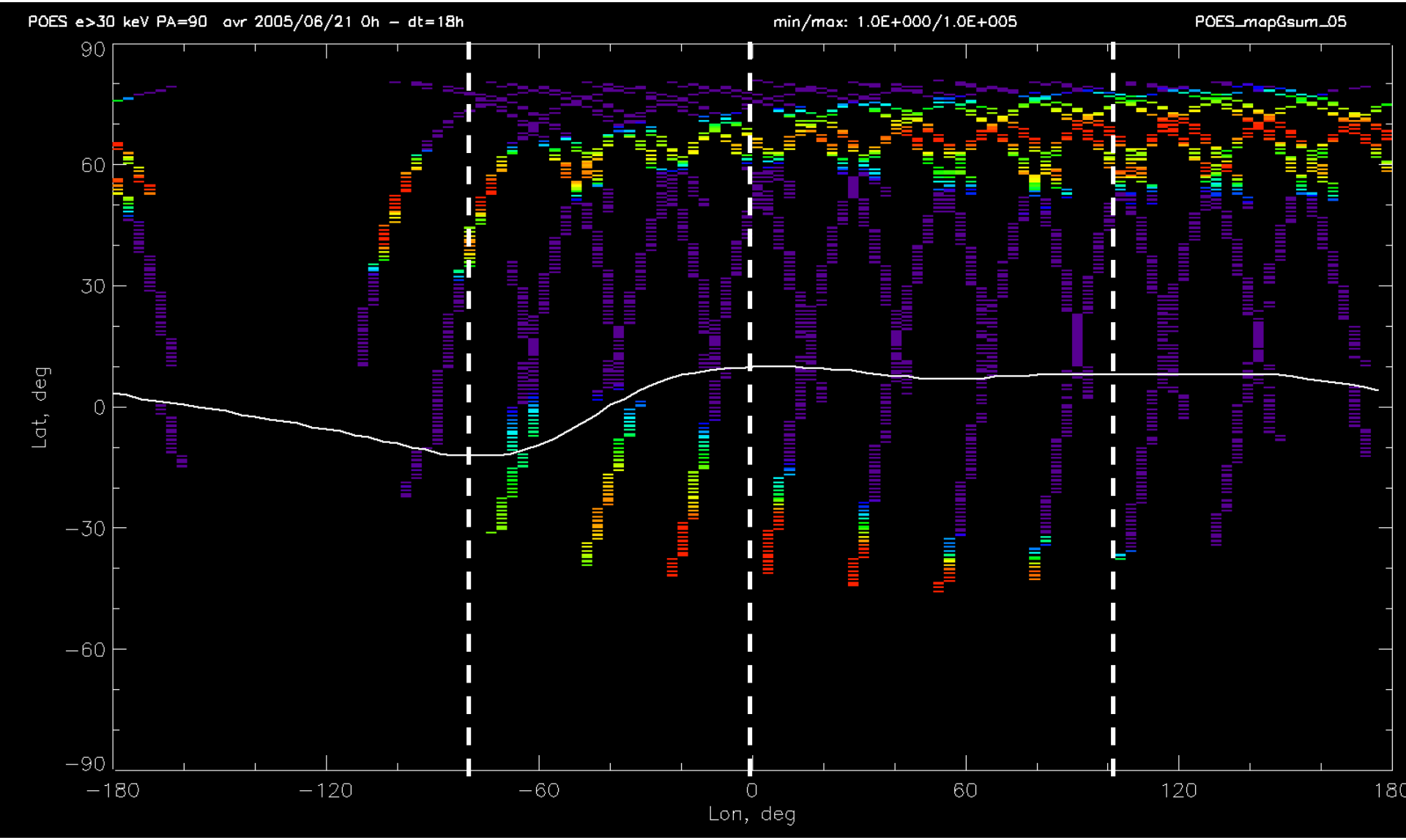
180
Lon, deg

Set map030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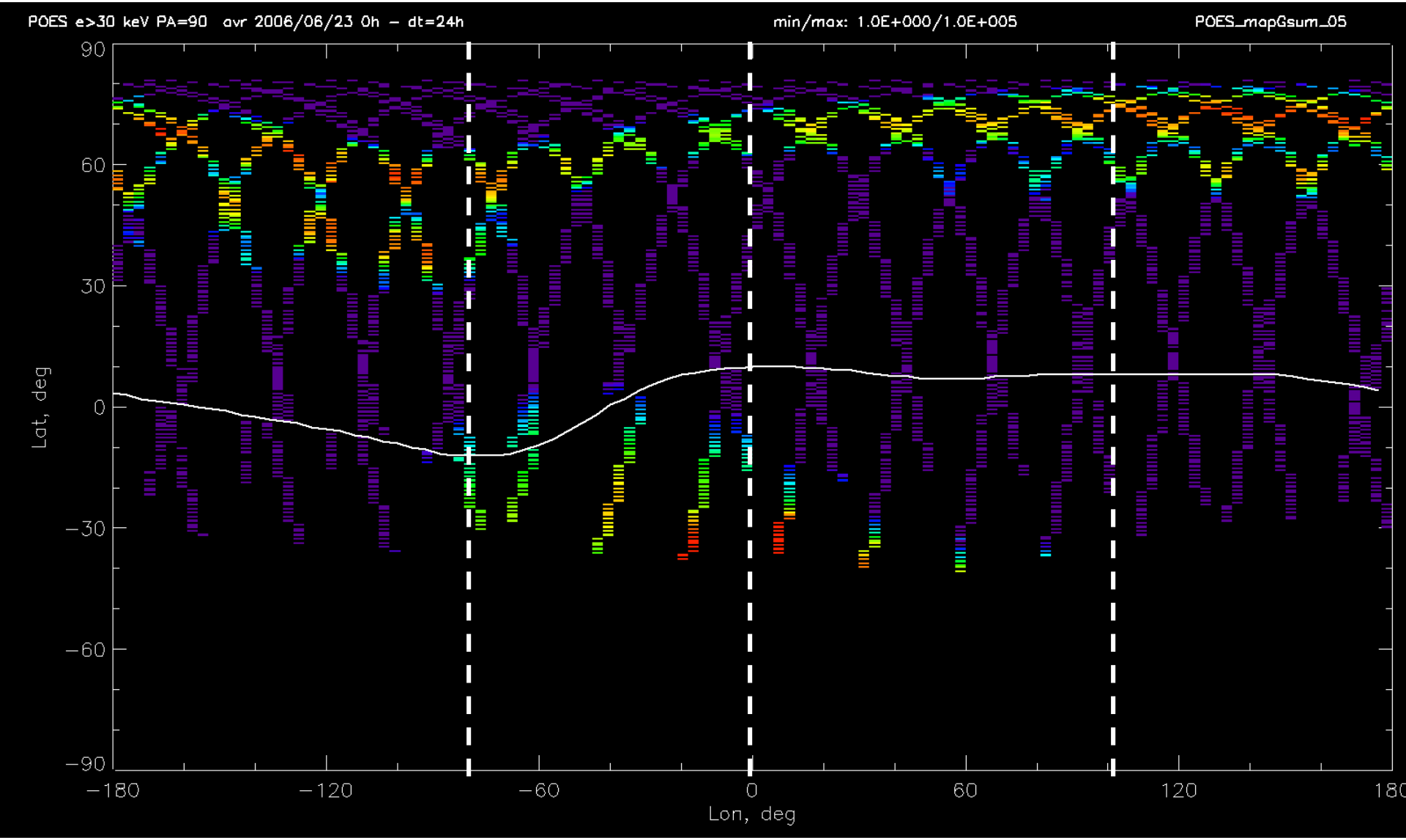
Lon, deg

Set map030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Lat, deg
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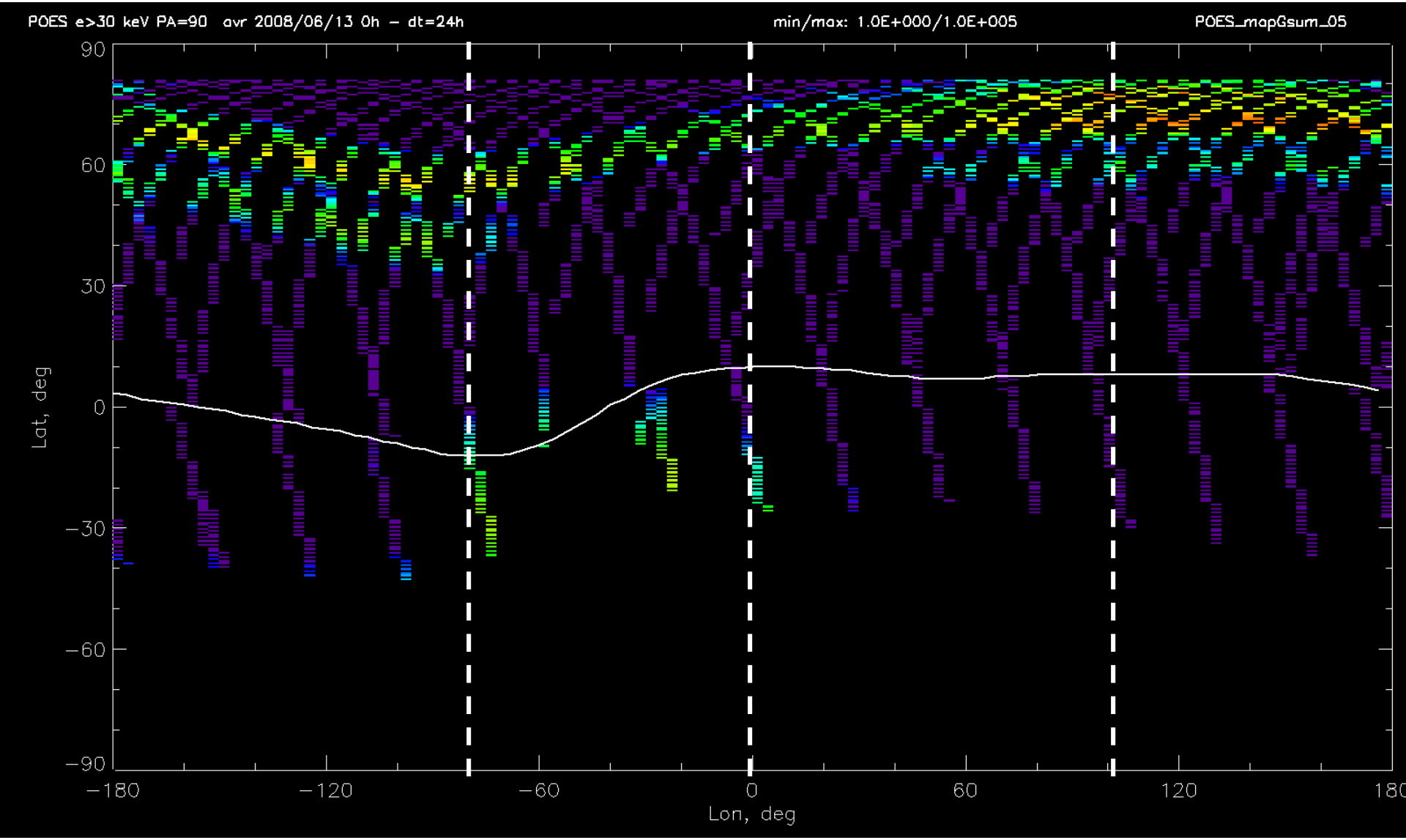
120
180
Lon, deg

Set map030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Lat, deg
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0
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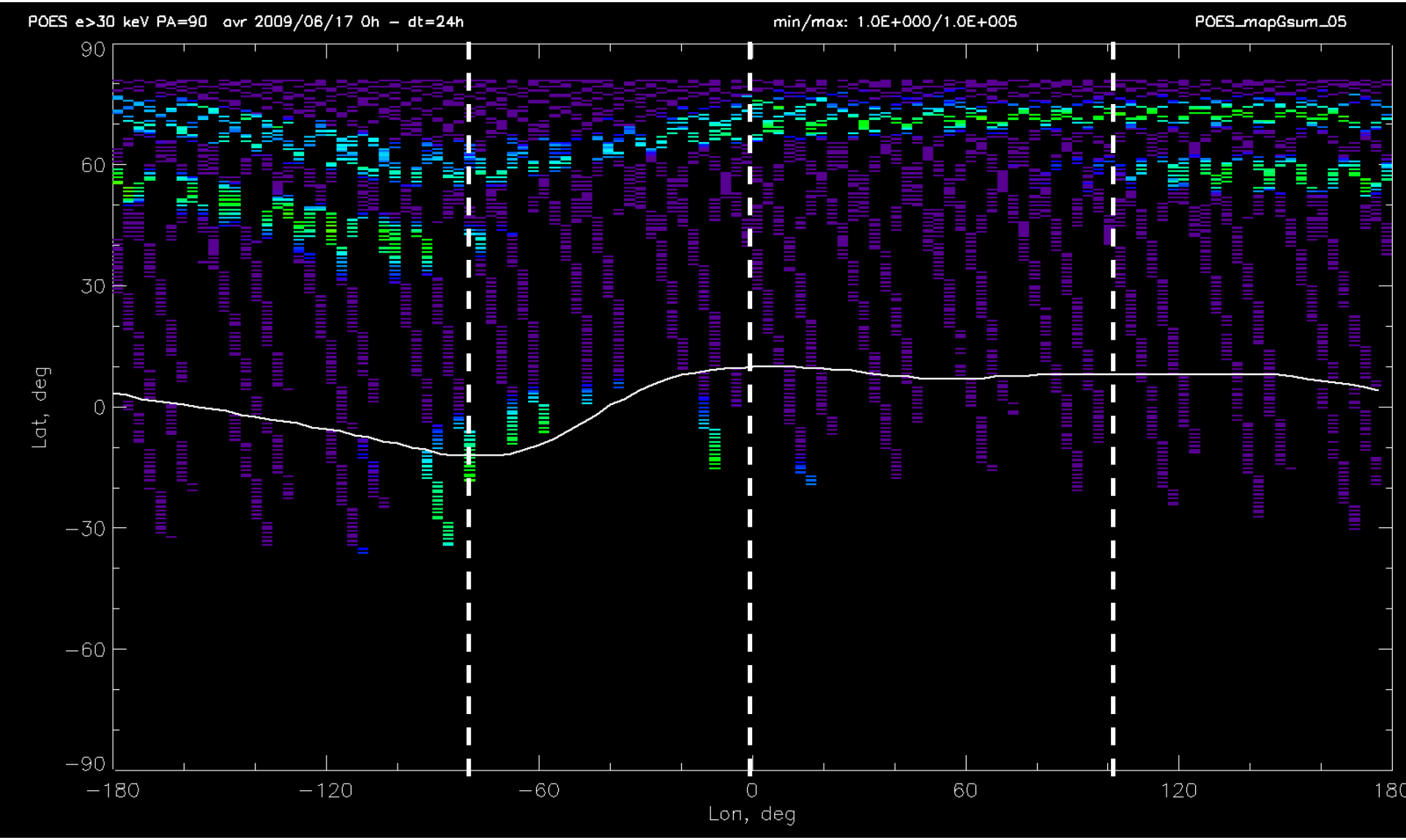
120
180
Lon, deg

Set map030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Lon, deg

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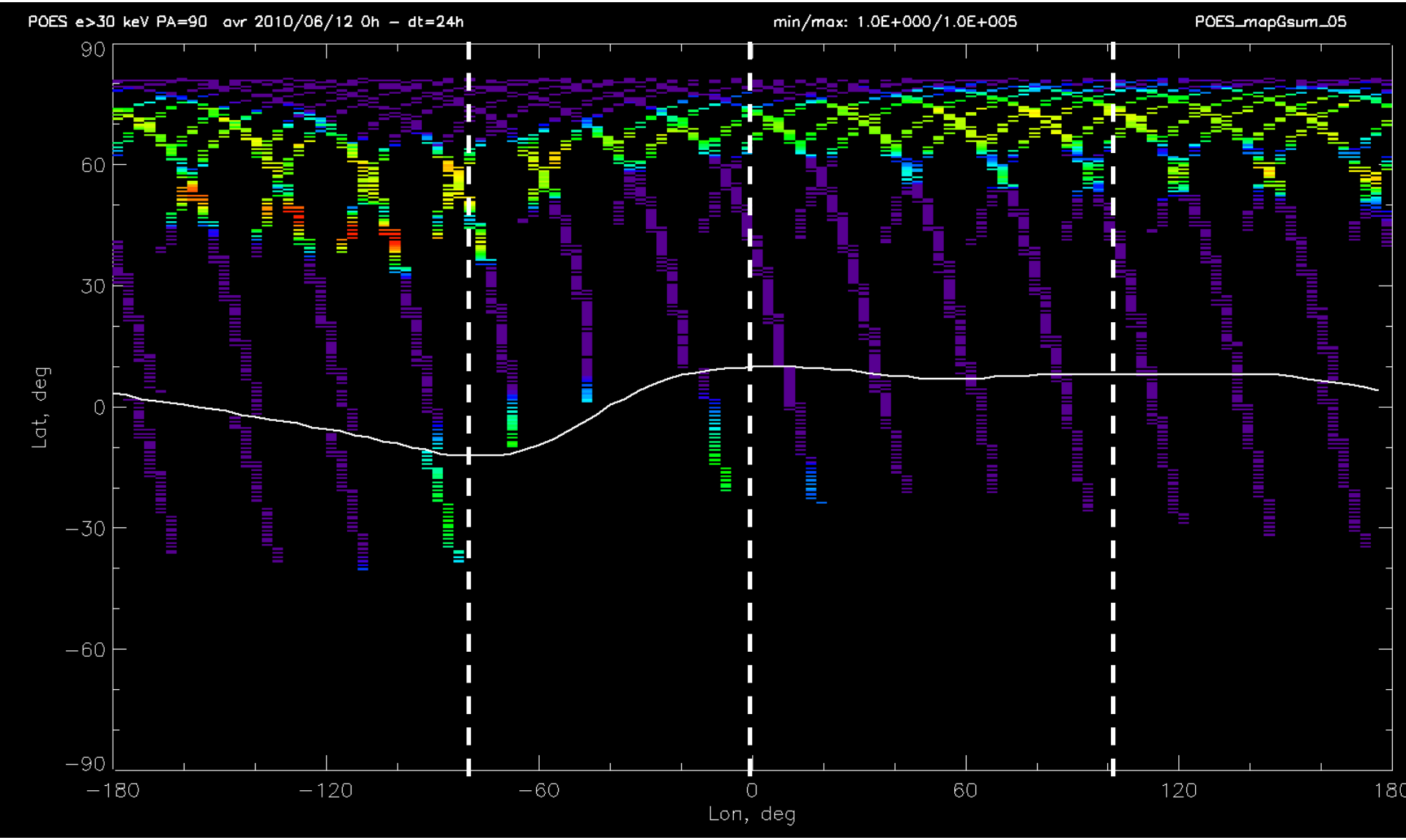
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120
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Lon, deg

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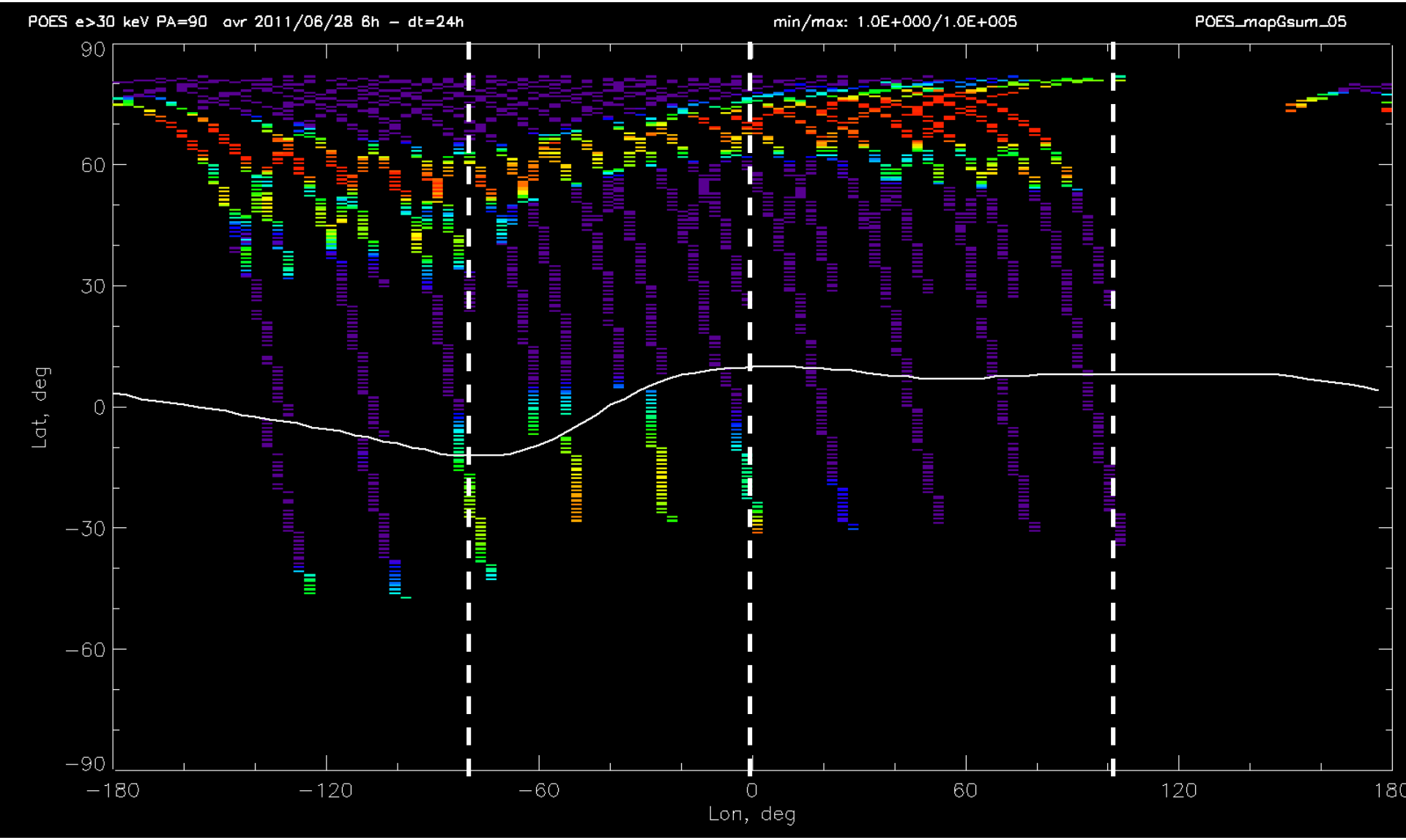
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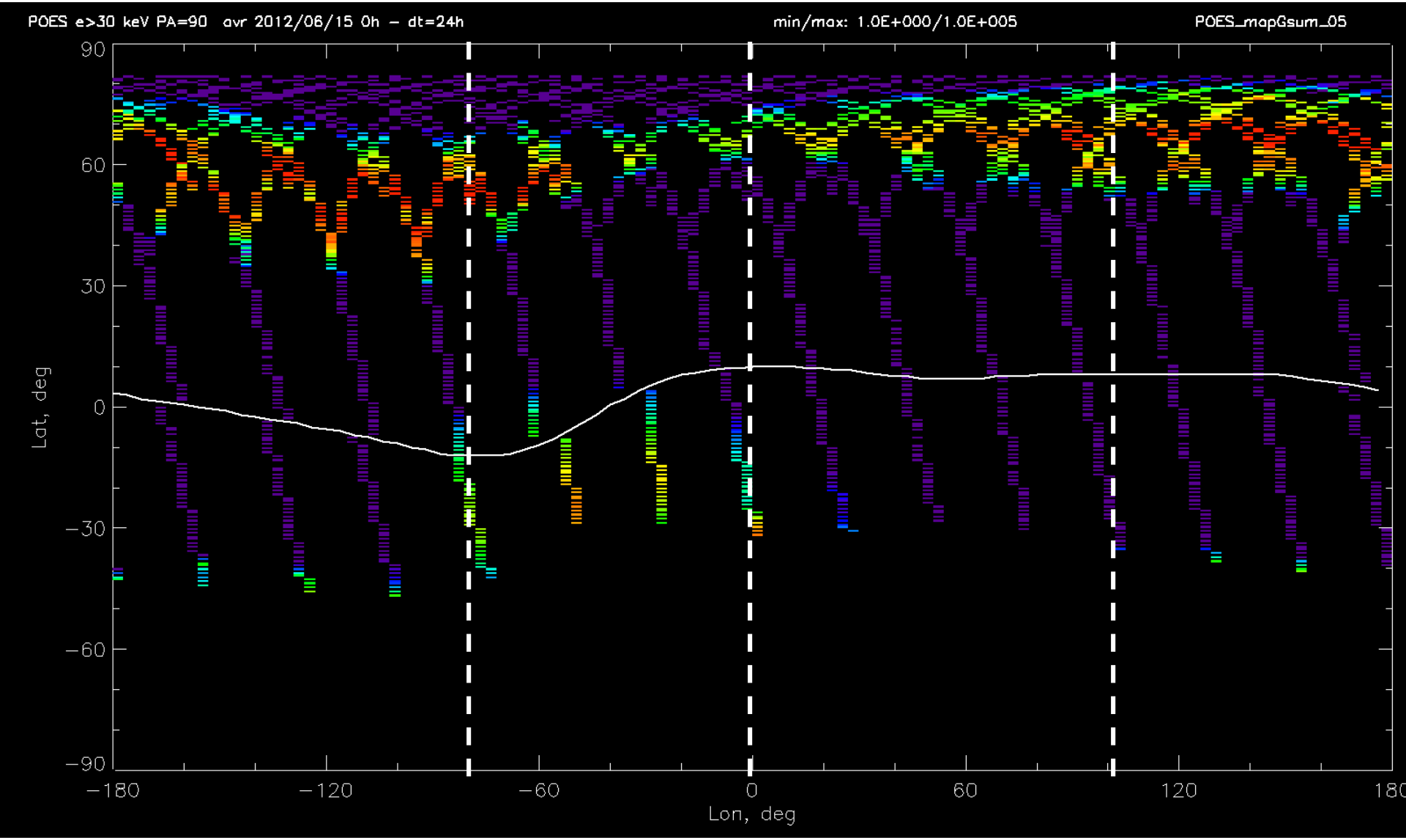
−60
−90
Lat, deg
−180
−120
−60
0
60
120
180
Lon, deg

Set map030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−30
−60
−90
Lat, deg
−180
−120
−60
0
60
120
180
Lon, deg

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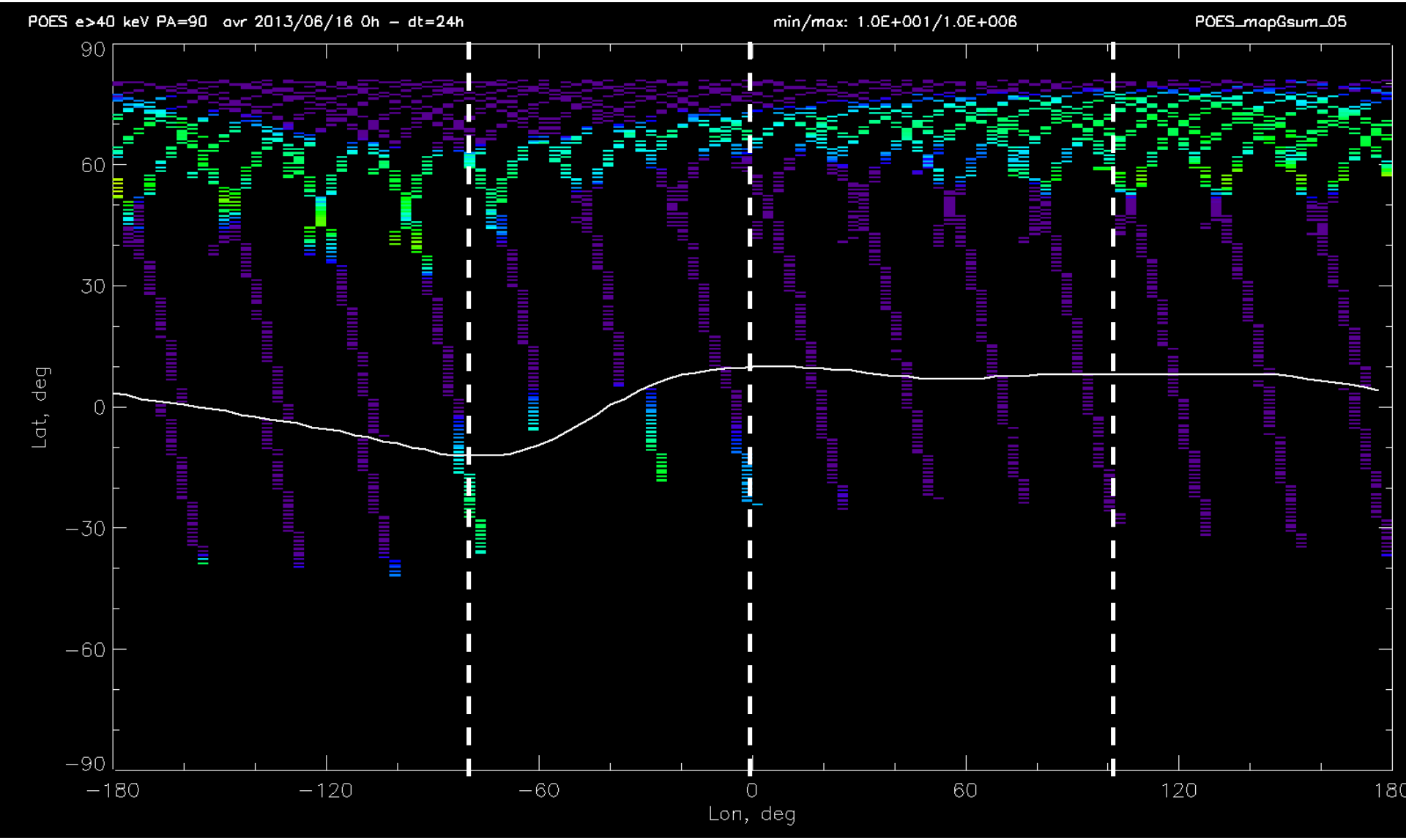
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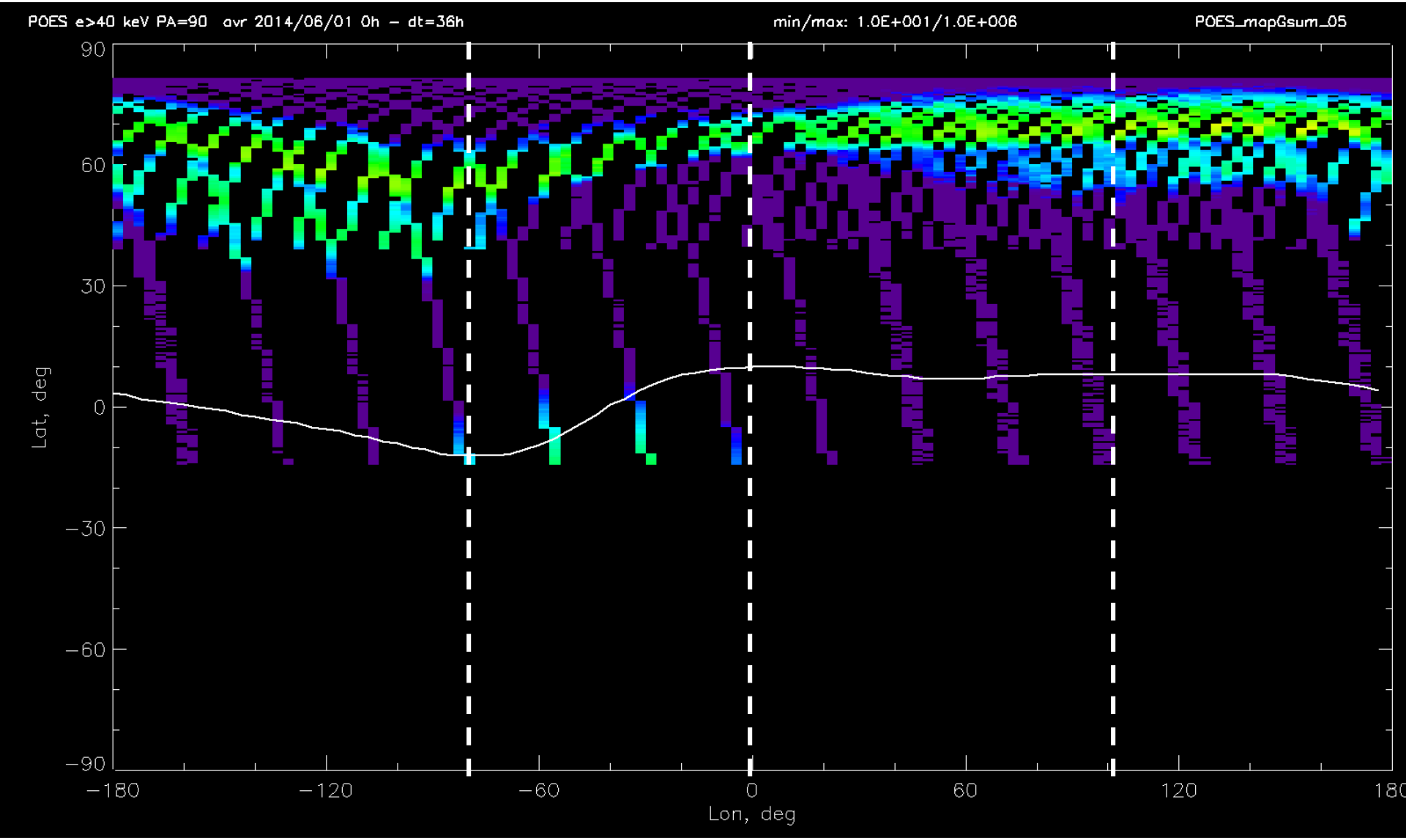
−60
−90
Lat, deg
−180
−120
−60
0
60
120
180
Lon, deg

Set map030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30
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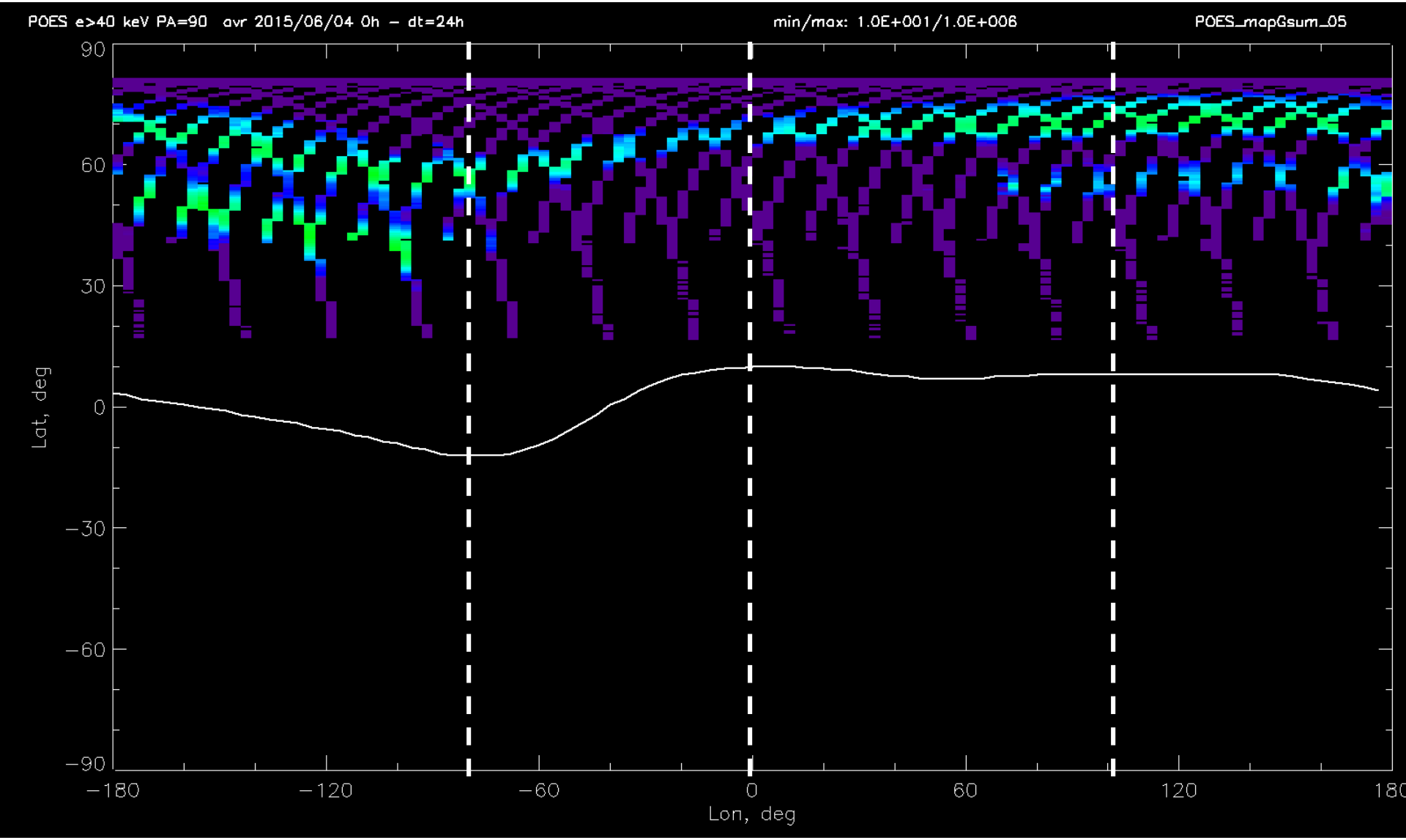
−30
−60
−90
Lat, deg
−180
−120
−60
0
60
120
180
Lon, deg

Set map030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min/max: 1.0E+001/1.0E+006
POES_mapGsum_05
90
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−60
−90
Lat, deg
−180
−120
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0
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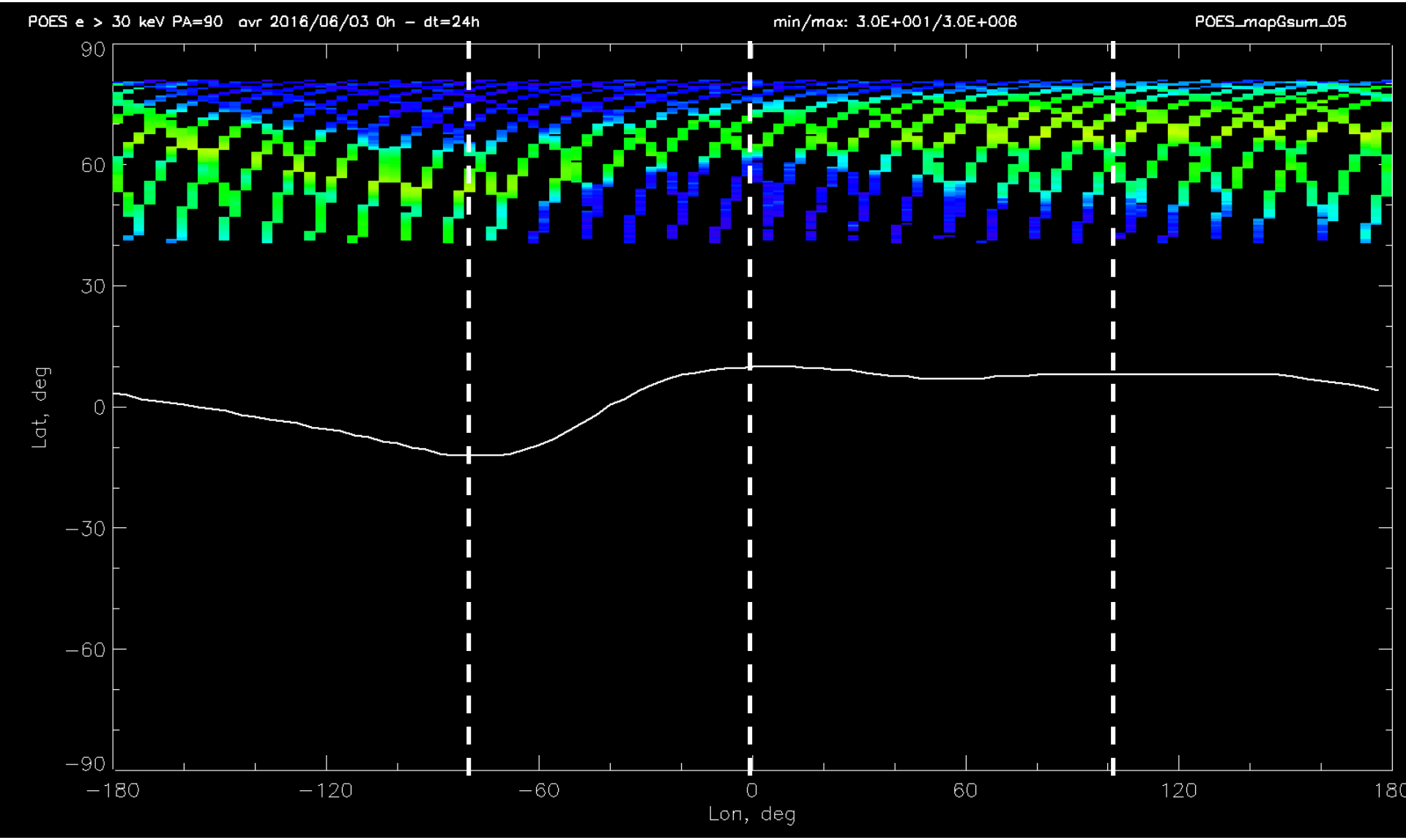
120
180
Lon, deg

Set map030


POES e > 30 keV PA=90 avr 2016/06/03 0h – dt=24h
min/max: 3.0E+001/3.0E+008
POES_mapGsum_05
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Lat, deg
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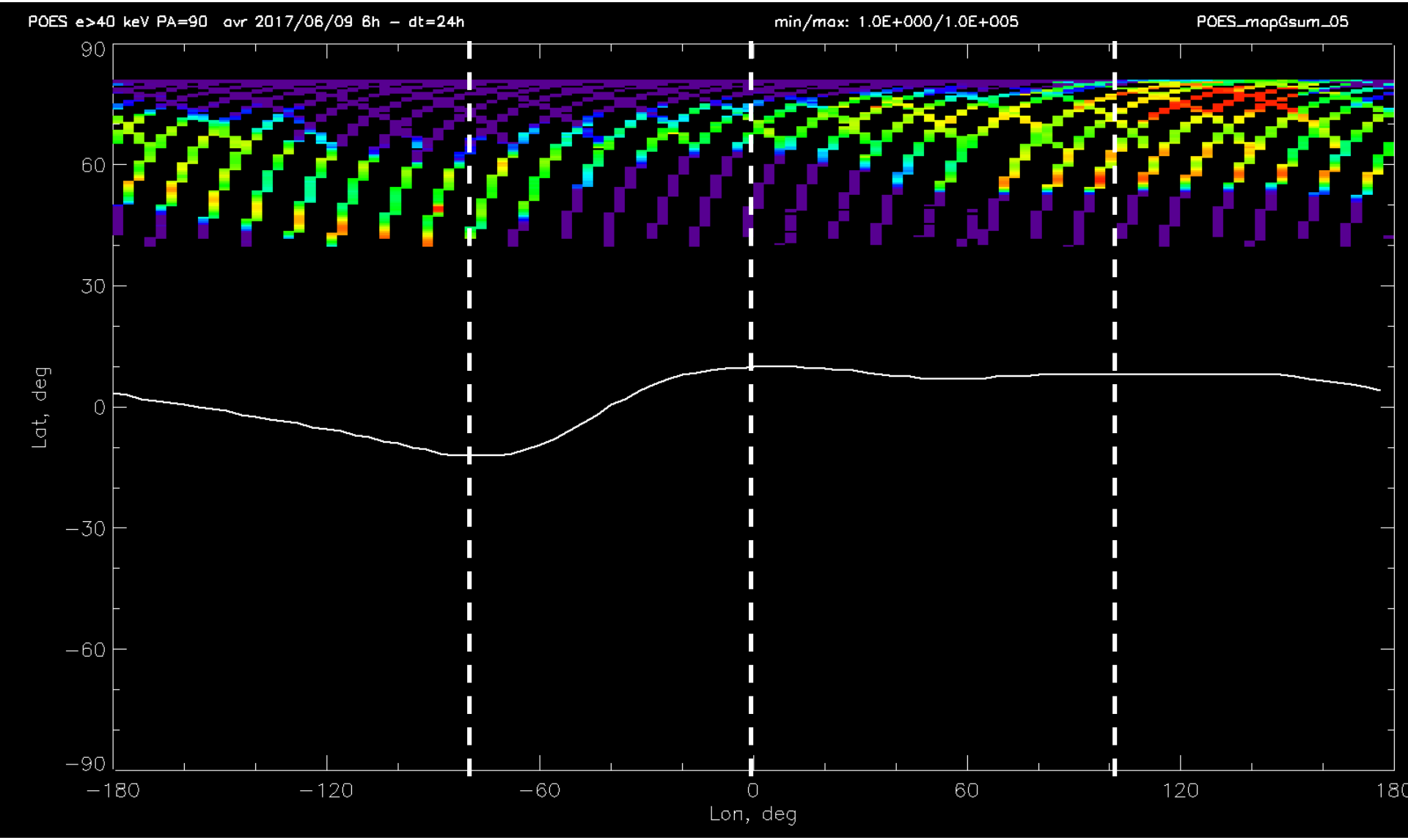
Lon, deg

Set map030


POES e>40 keV PA=90 avr 2017/06/09 6h – dt=24h
min/max: 1.0E+000/1.0E+005
POES_mapGsum_05
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Lat, deg
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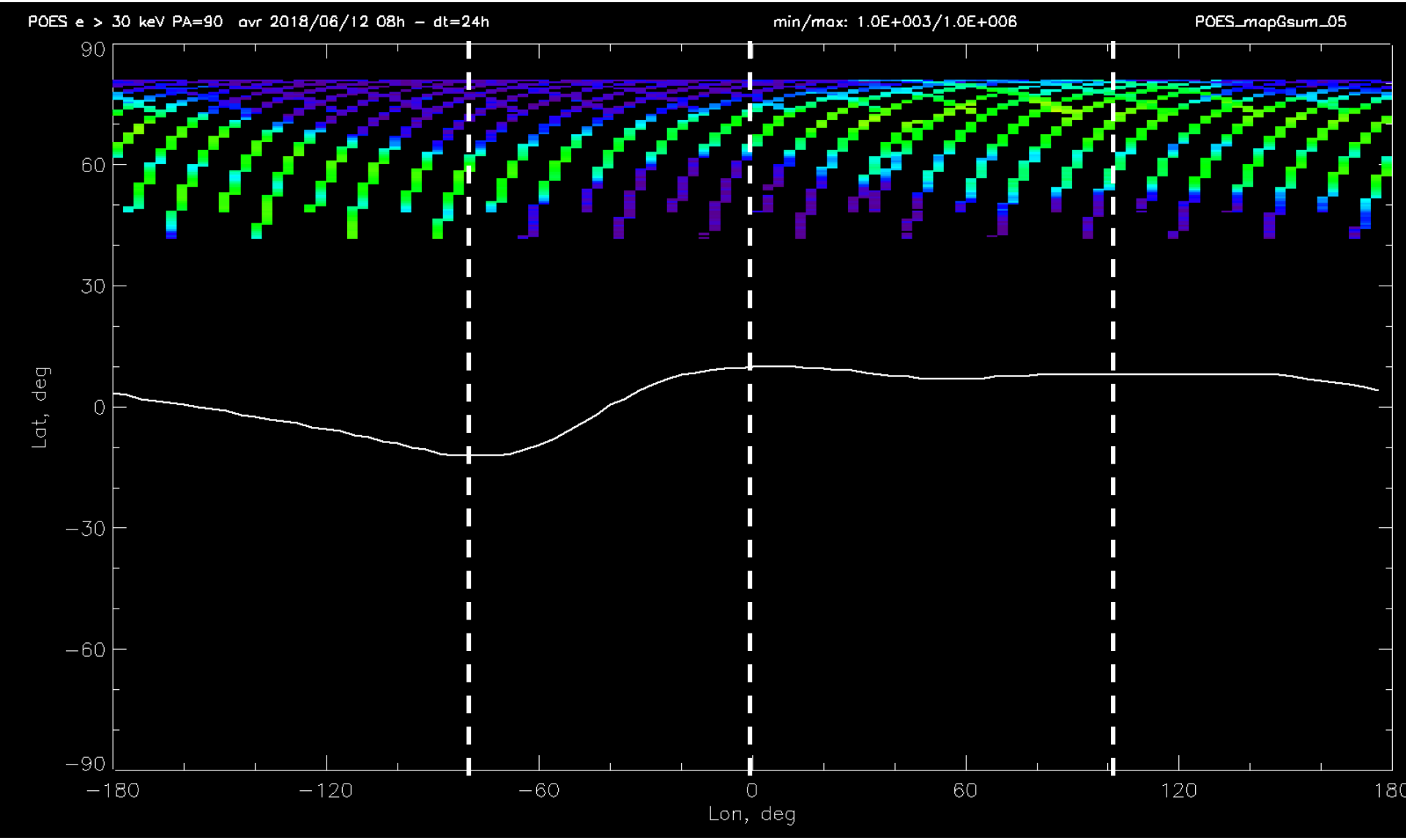
Lon, deg

Set map030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min/max: 1.0E+003/1.0E+008
POES_mapGsum_05
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Lat, deg
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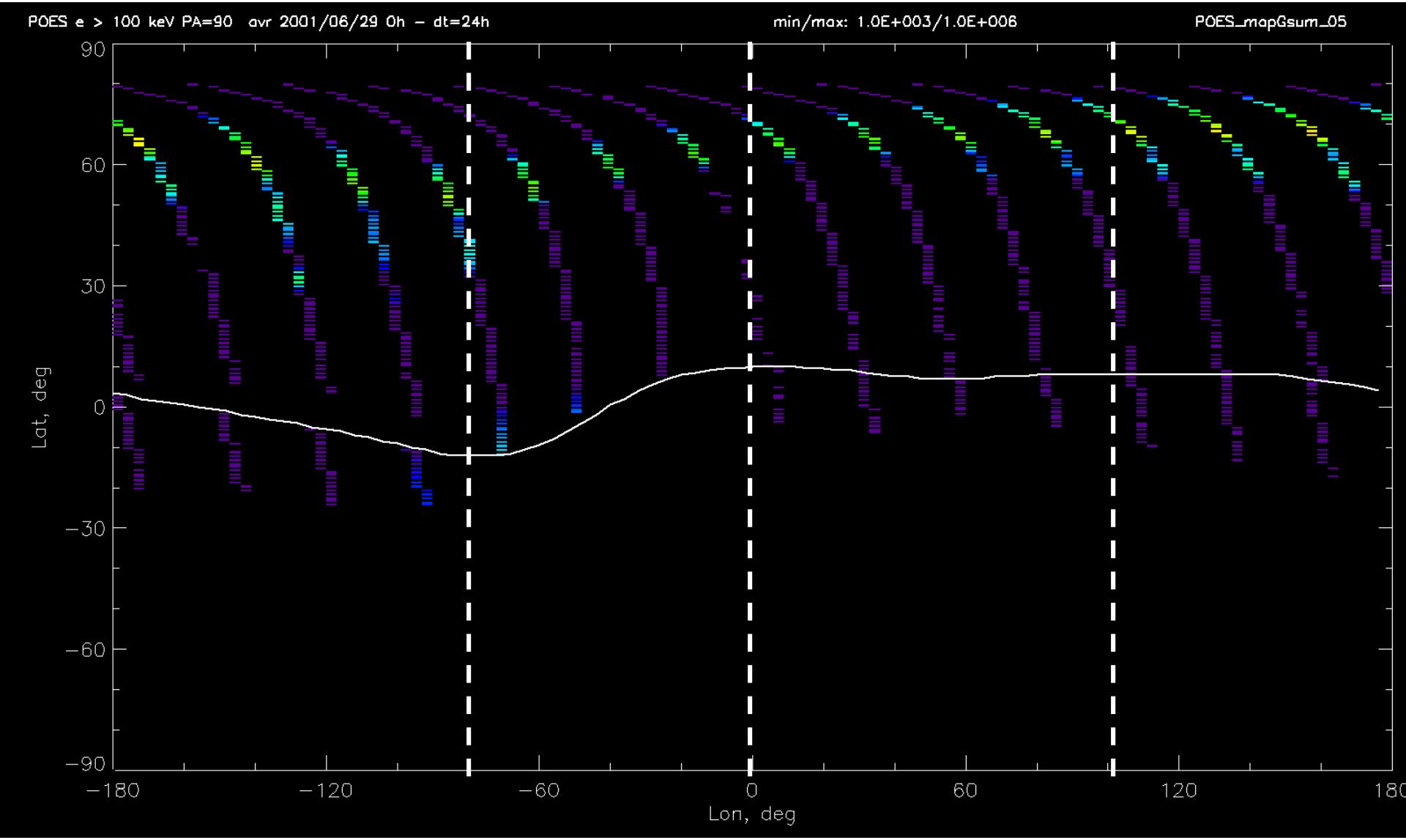
Lon, deg

Set map100


POES e > 100 keV PA=90 avr 2001/06/29 0h – dt=24h
min/max: 1.0E+003/1.0E+006
POES_mapGsum_05
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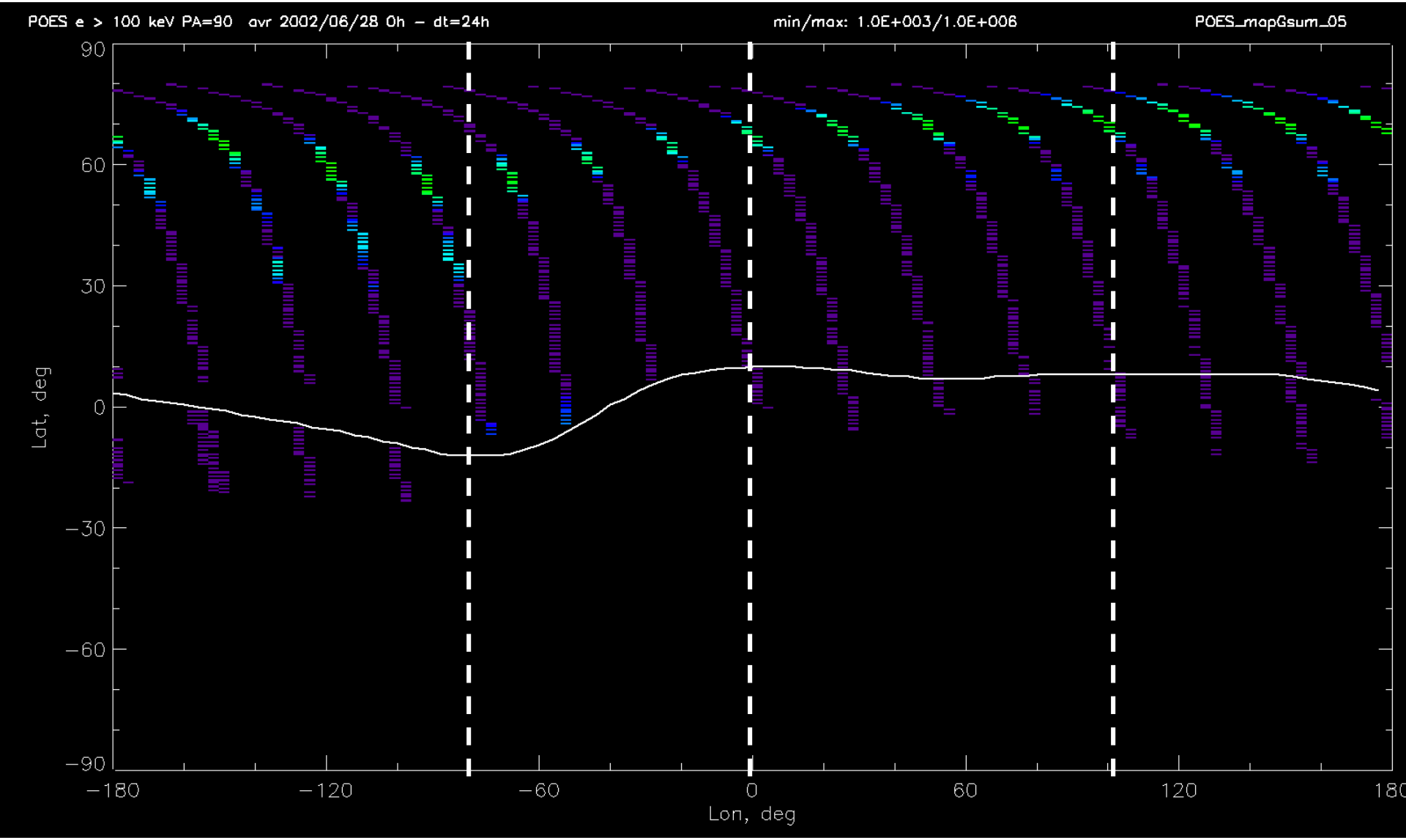
Lon, deg

Set map100


POES e > 100 keV PA=90 avr 2002/06/28 0h – dt=24h
min/max: 1.0E+003/1.0E+006
POES_mapGsum_05
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Lat, deg
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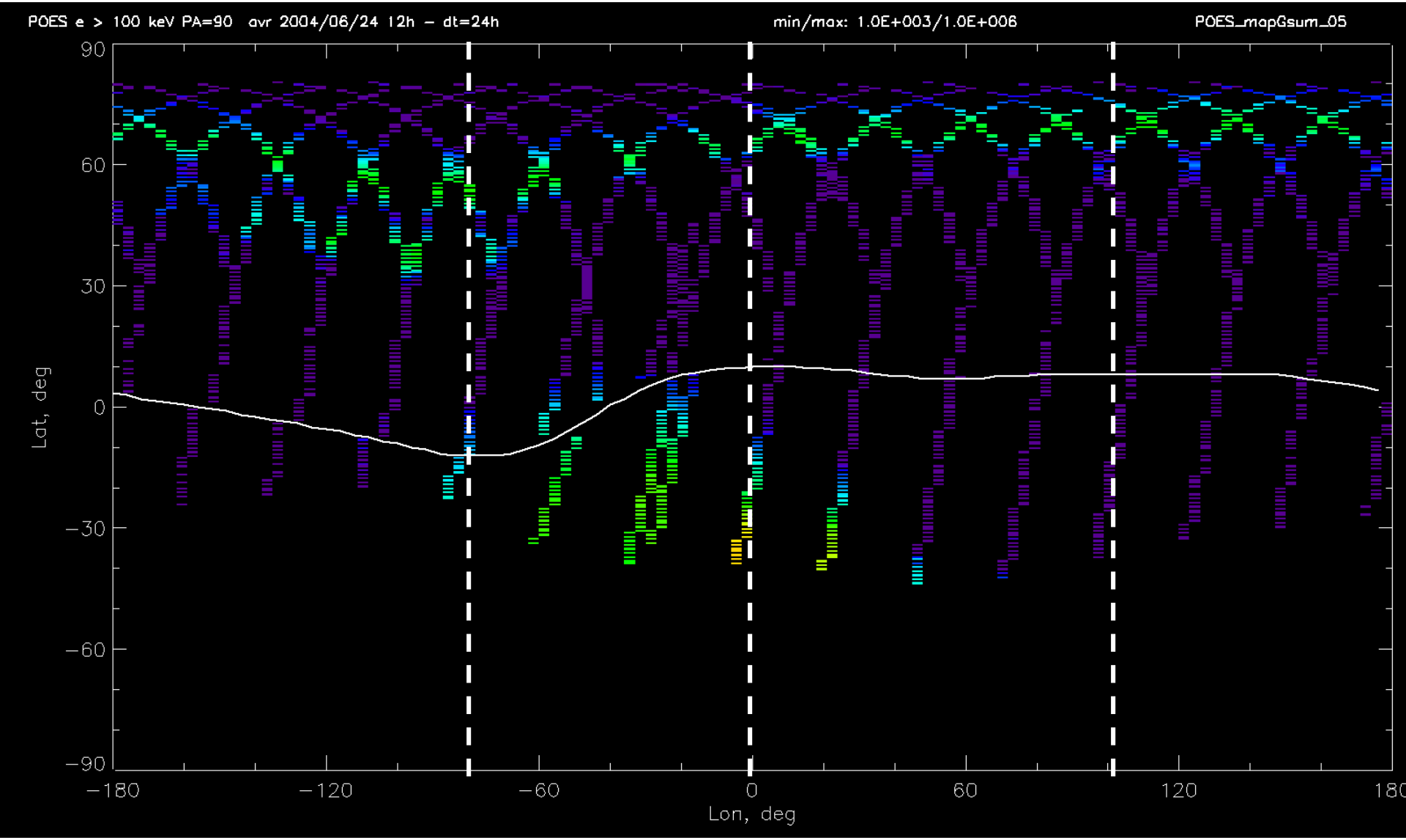
Lon, deg

Set map100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min/max: 1.0E+003/1.0E+006
POES_mapGsum_05
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Lat, deg
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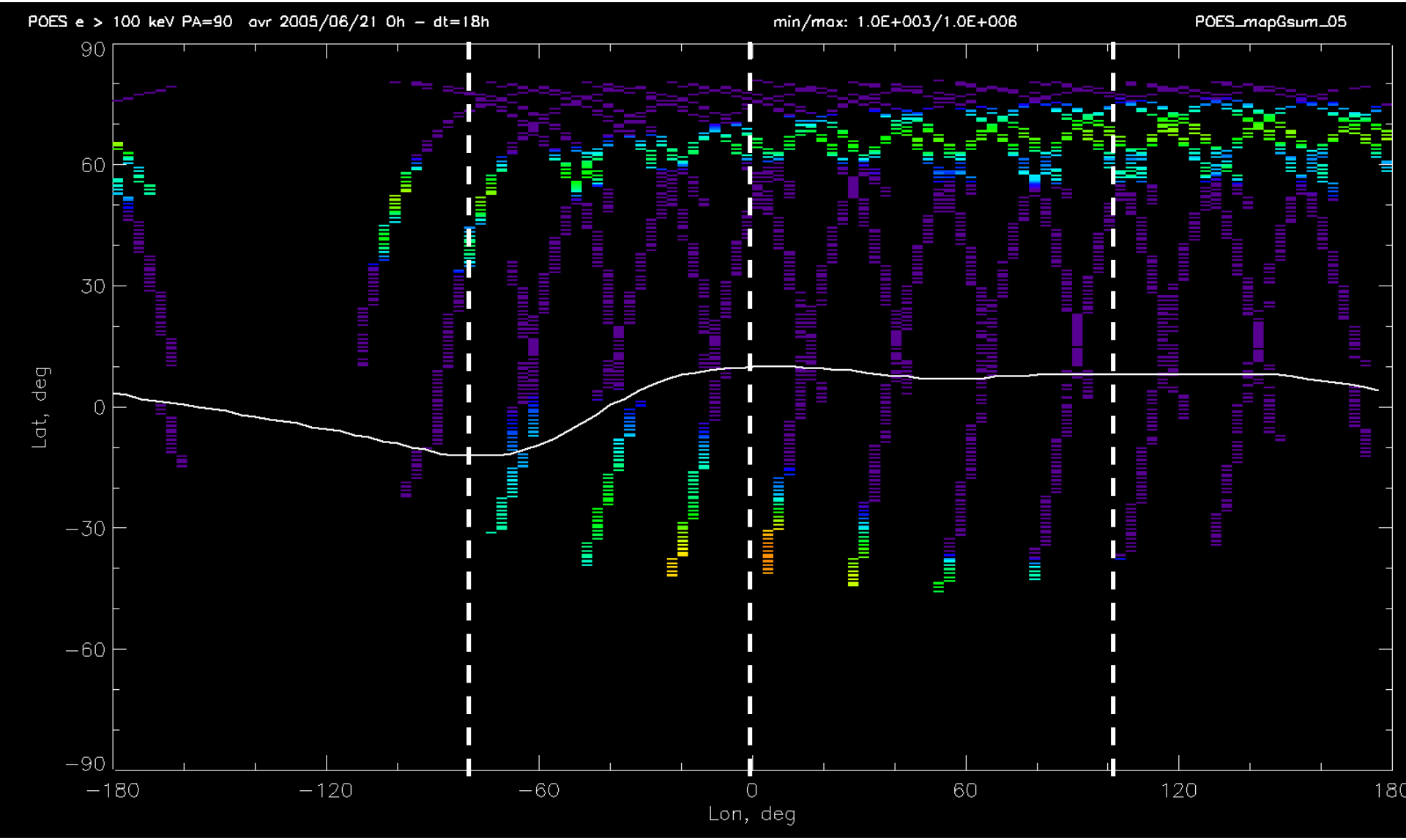
Lon, deg

Set map100


POES e > 100 keV PA=90 avr 2005/06/21 0h – dt=18h
min/max: 1.0E+003/1.0E+006
POES_mapGsum_05
90
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Lat, deg
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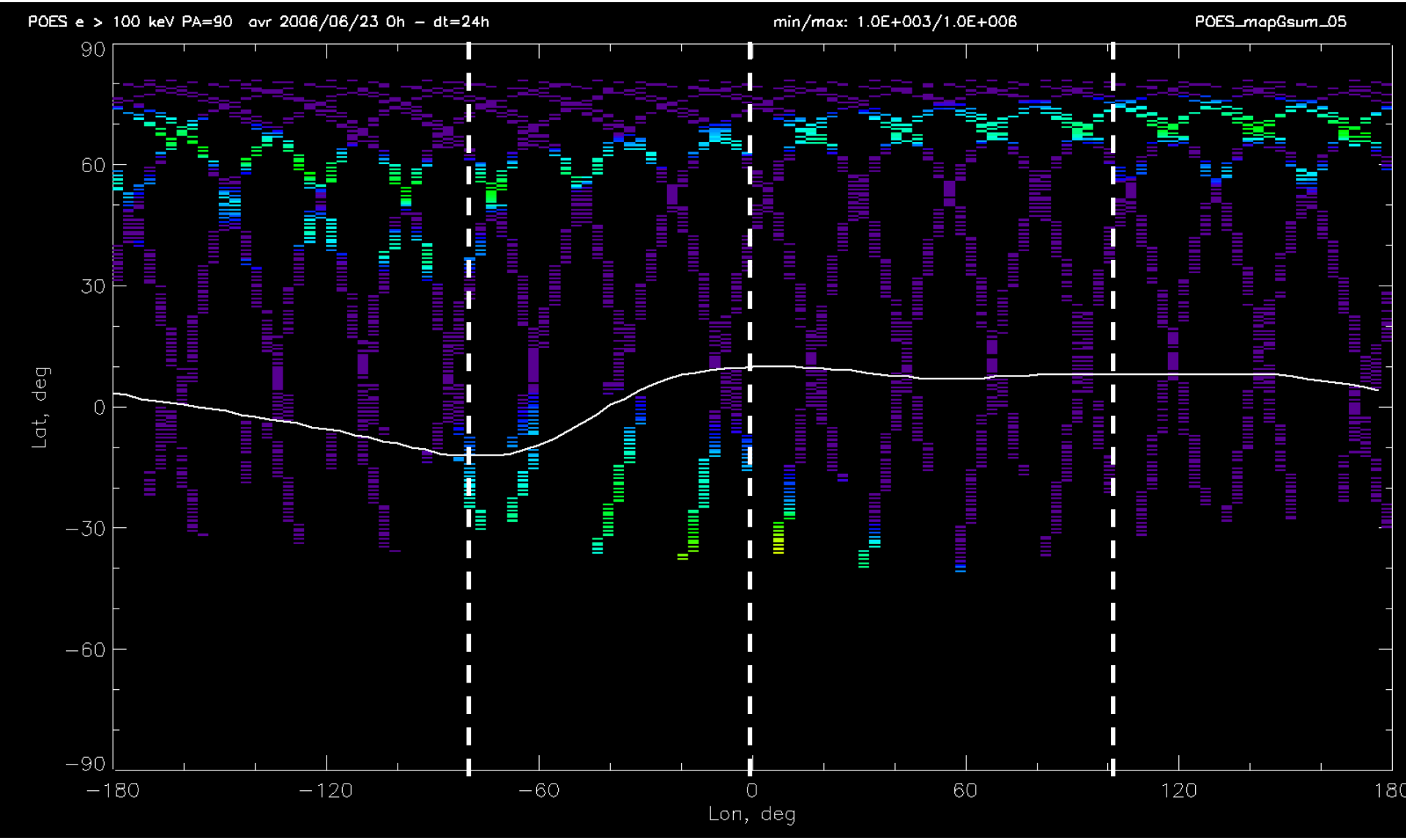
Lon, deg

Set map100


POES e > 100 keV PA=90 avr 2006/06/23 0h – dt=24h
min/max: 1.0E+003/1.0E+006
POES_mapGsum_05
90
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Lat, deg
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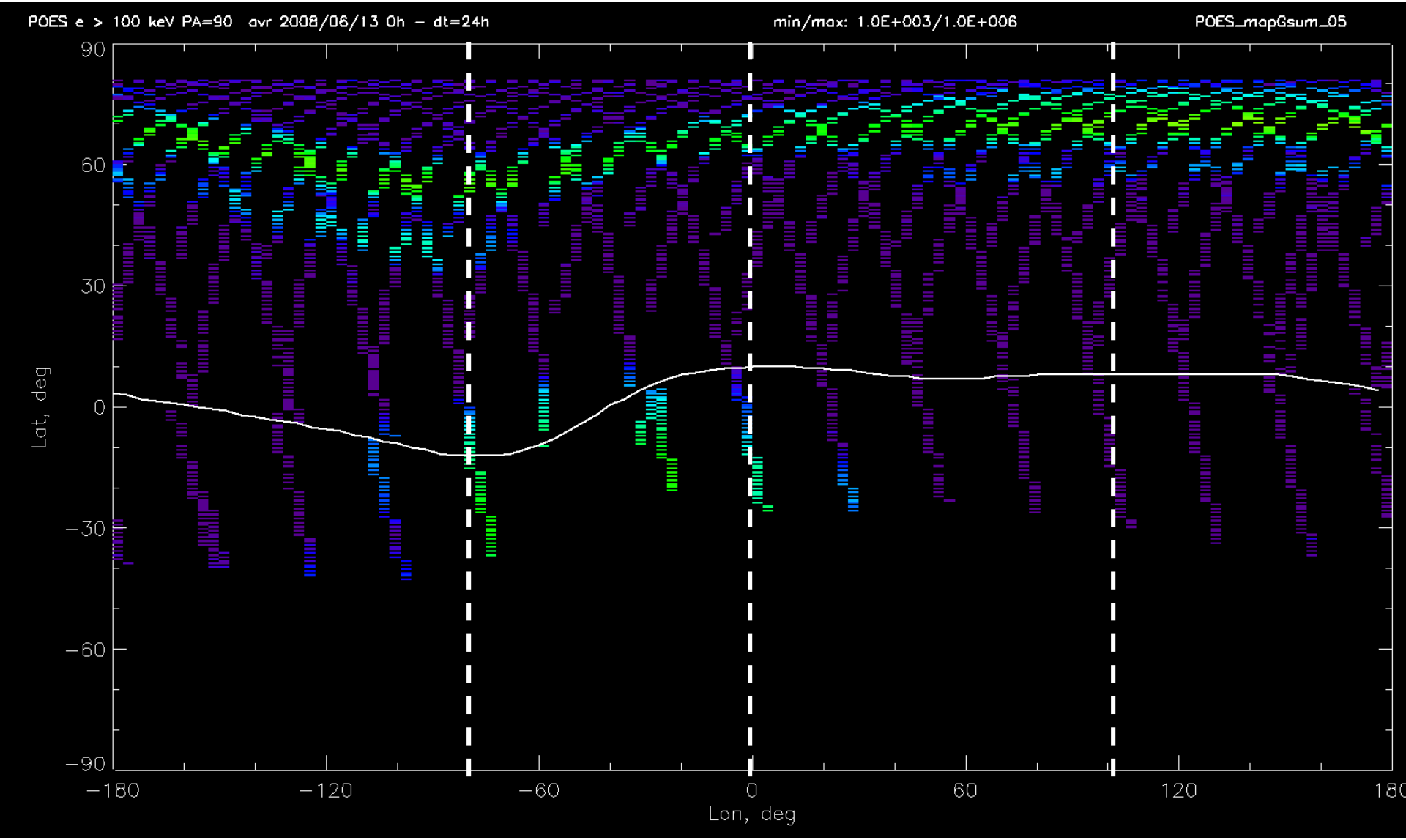
Lon, deg

Set map100


POES e > 100 keV PA=90 avr 2008/06/13 0h – dt=24h
min/max: 1.0E+003/1.0E+008
POES_mapGsum_05
90
60
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Lat, deg
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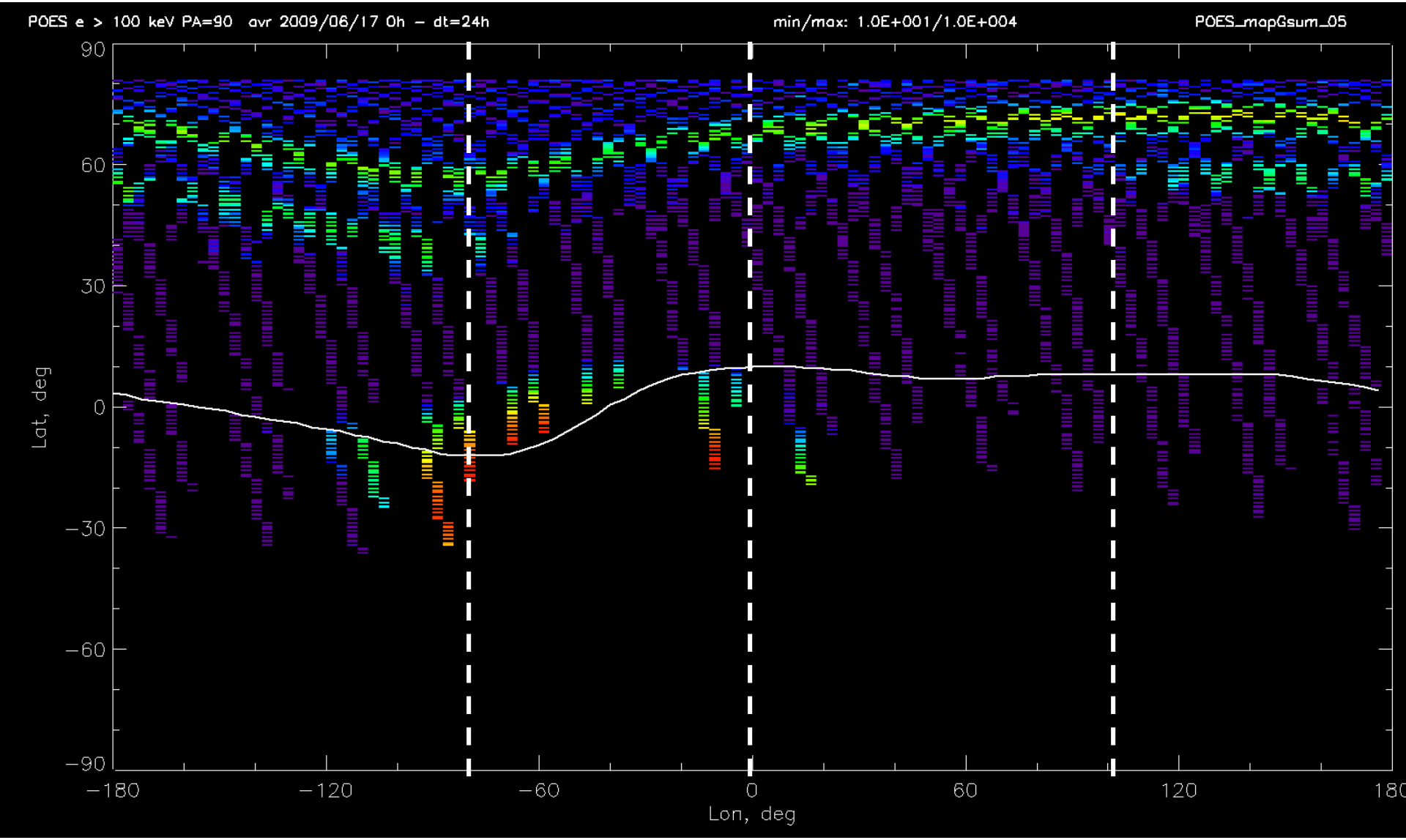
Lon, deg

Set map100


POES e > 100 keV PA=90 avr 2009/06/17 0h – dt=24h
min/max: 1.0E+001/1.0E+004
POES_mapGsum_05
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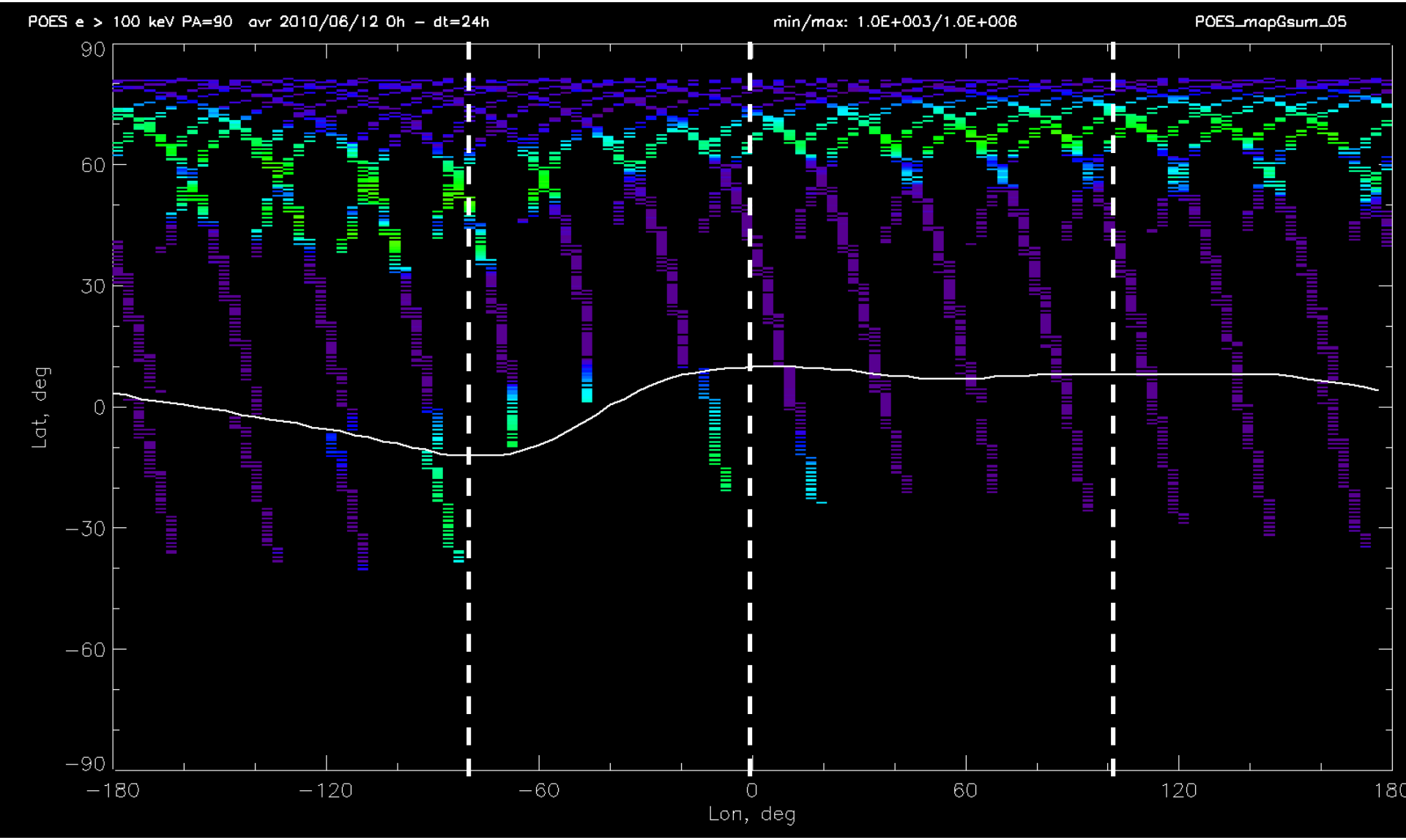
Lon, deg

Set map100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min/max: 1.0E+003/1.0E+006
POES_mapGsum_05
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Lat, deg
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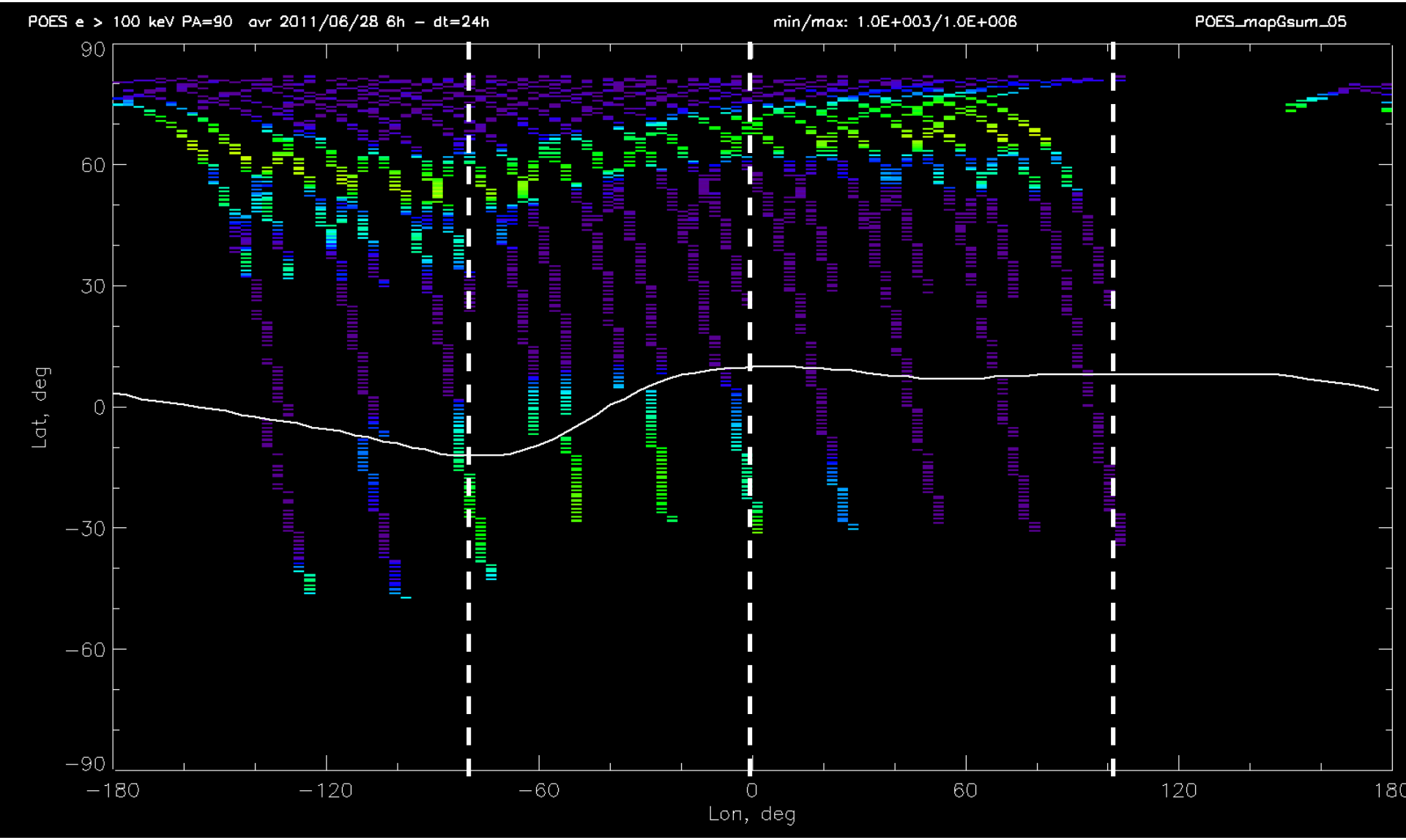
Lon, deg

Set map100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min/max: 1.0E+003/1.0E+006
POES_mapGsum_05
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Lat, deg
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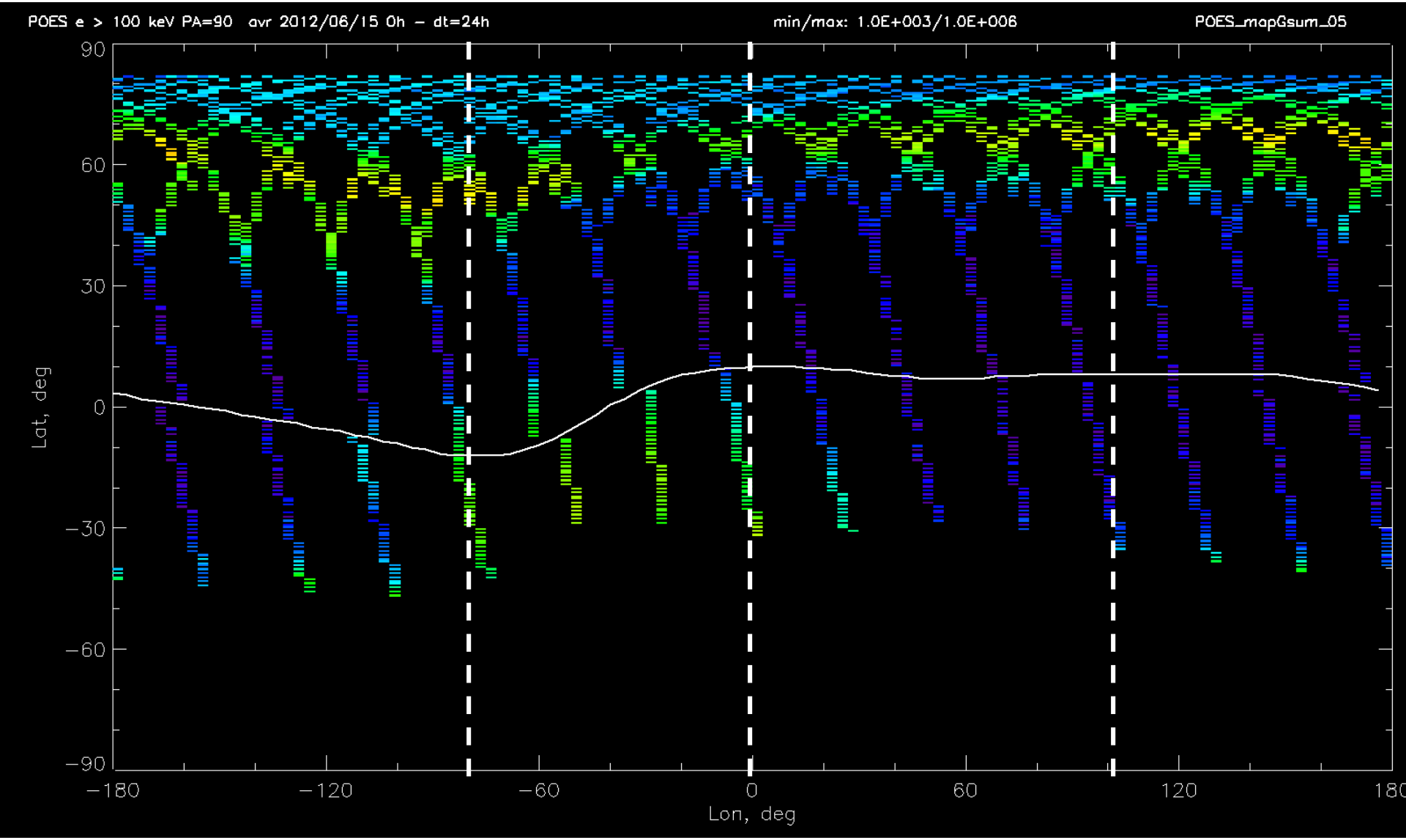
Lon, deg

Set map100


POES e > 100 keV PA=90 avr 2012/06/15 0h – dt=24h
min/max: 1.0E+003/1.0E+006
POES_mapGsum_05
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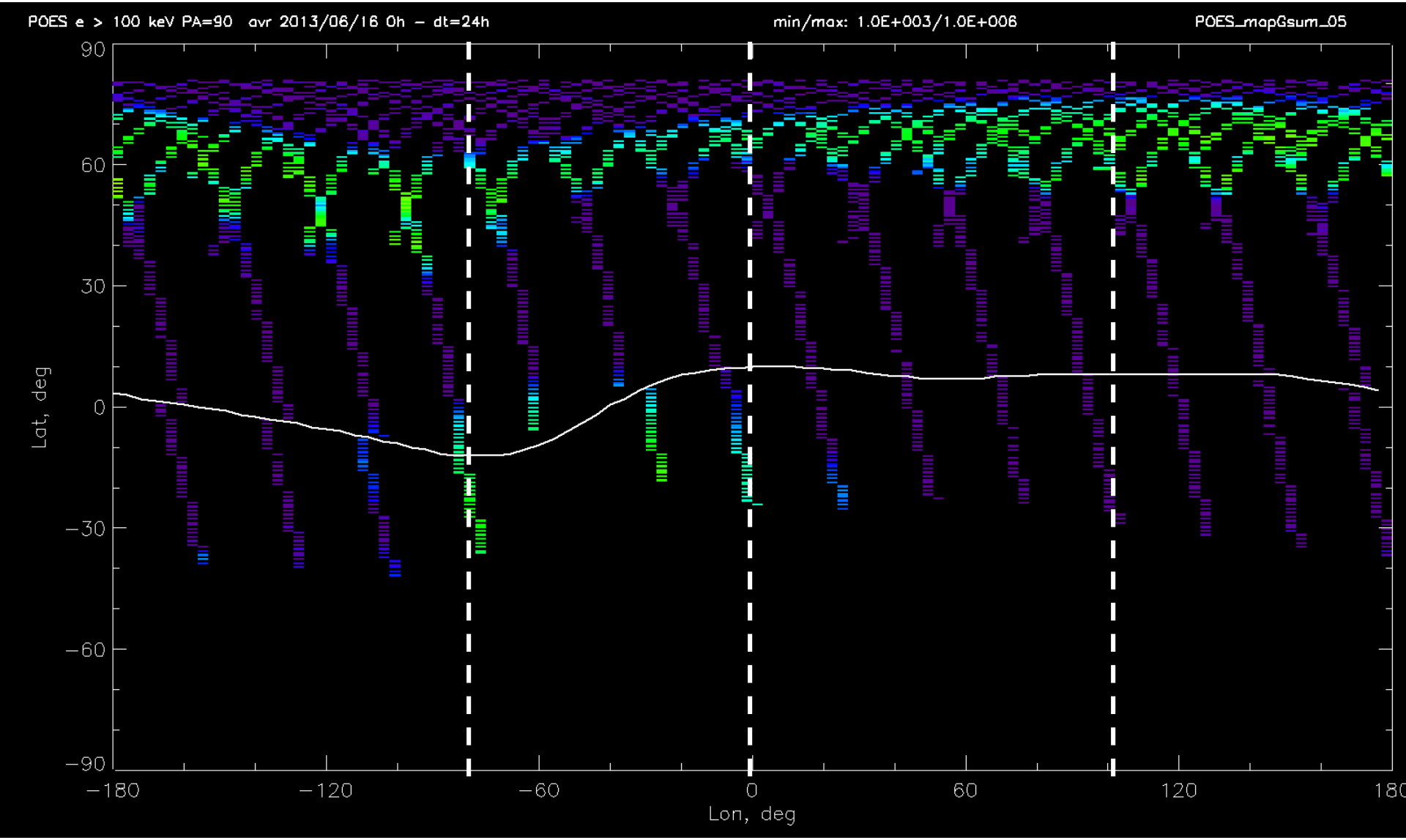
Lon, deg

Set map100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min/max: 1.0E+003/1.0E+006
POES_mapGsum_05
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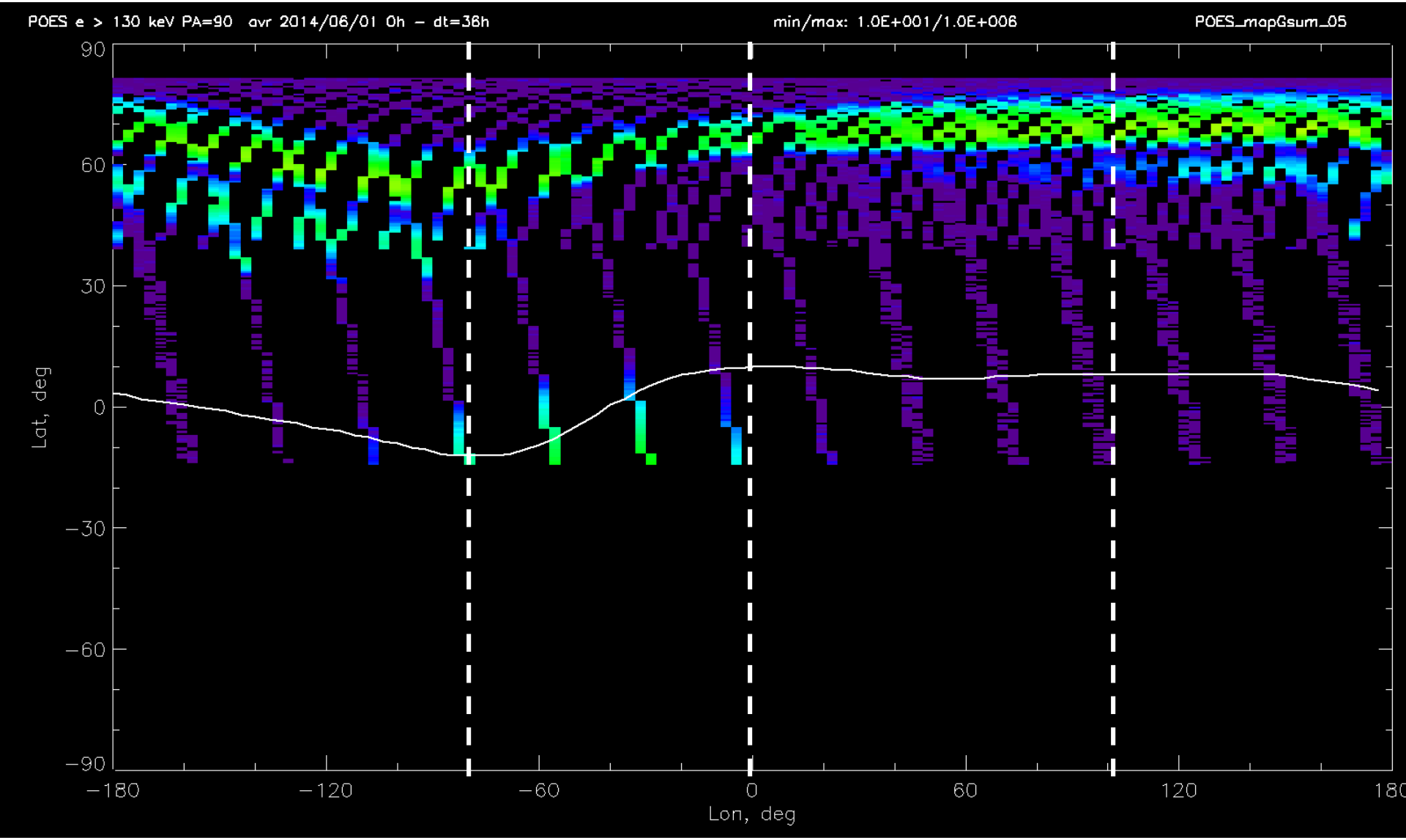
Lon, deg

Set map100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min/max: 1.0E+001/1.0E+006
POES_mapGsum_05
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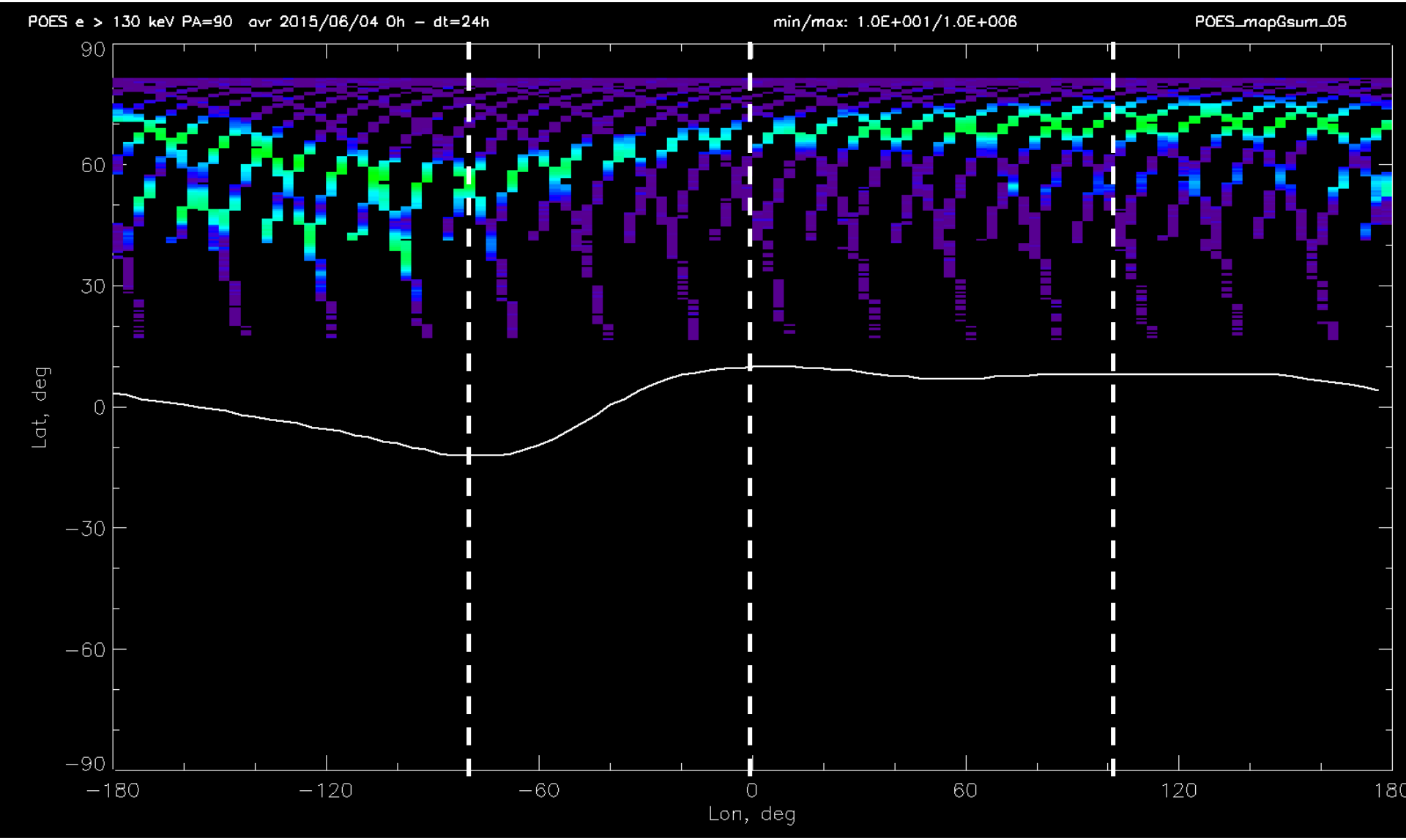
Lon, deg

Set map100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min/max: 1.0E+001/1.0E+006
POES_mapGsum_05
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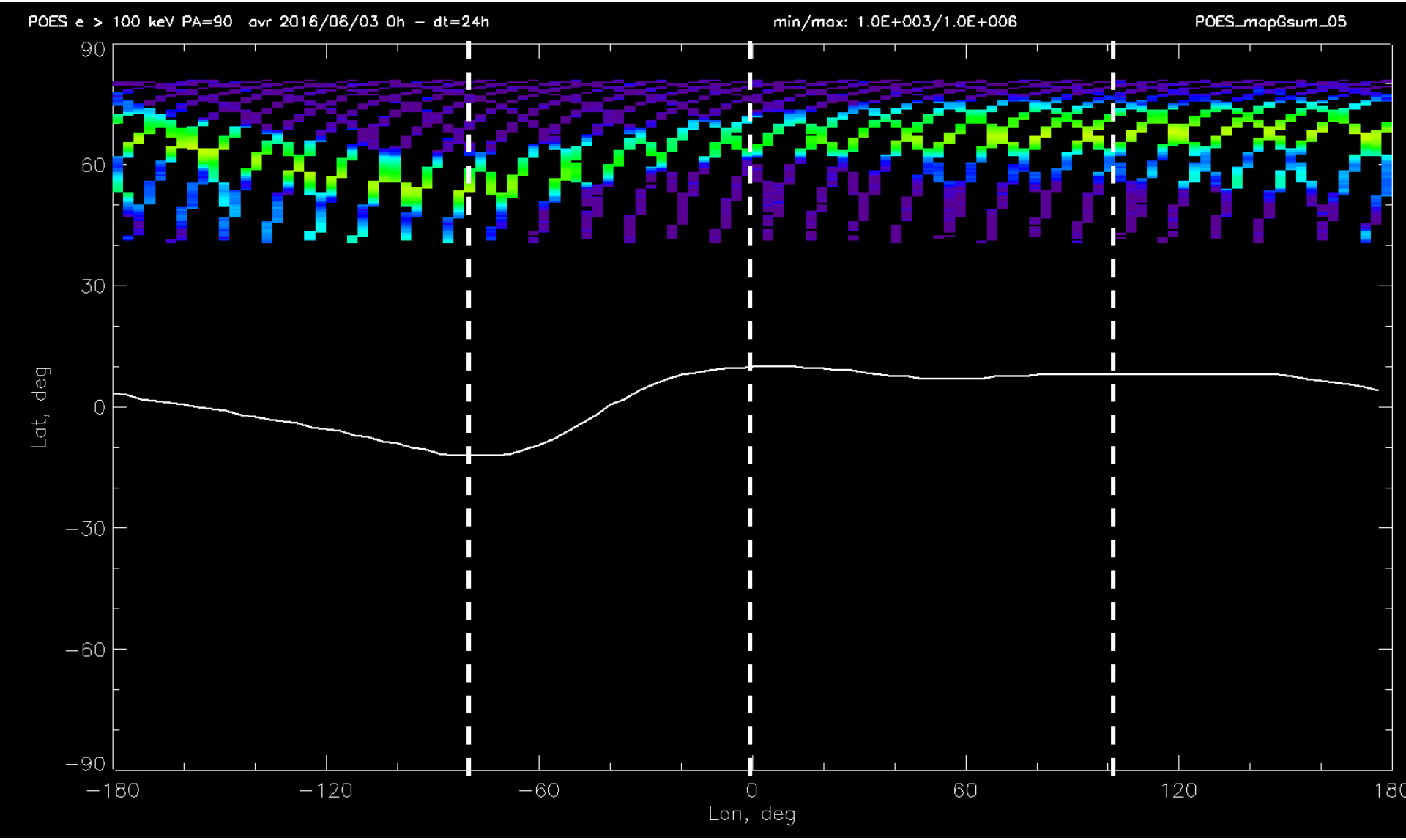
Lon, deg

Set map100


POES e > 100 keV PA=90 avr 2016/06/03 0h – dt=24h
min/max: 1.0E+003/1.0E+008
POES_mapGsum_05
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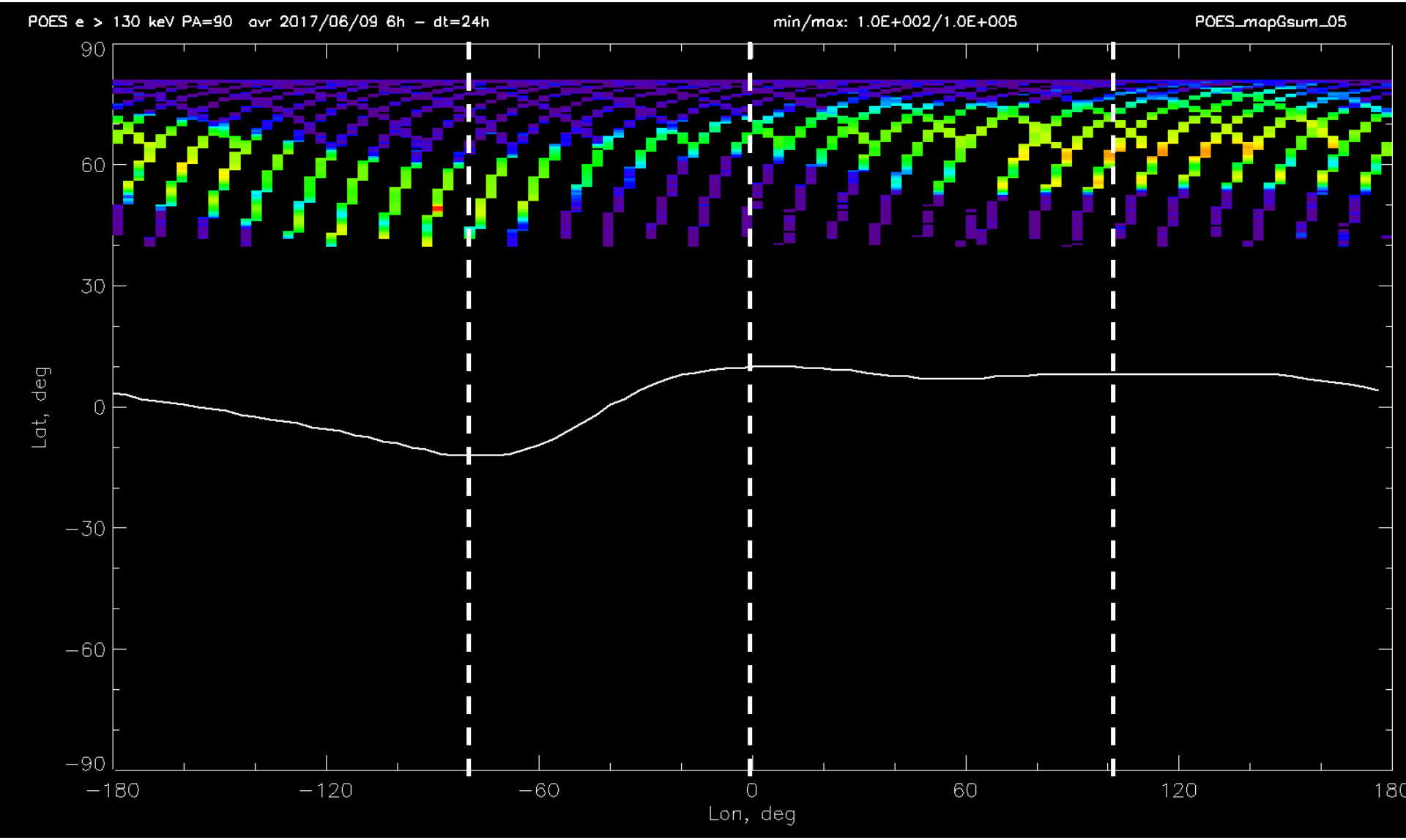
Lon, deg

Set map100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min/max: 1.0E+002/1.0E+005
POES_mapGsum_05
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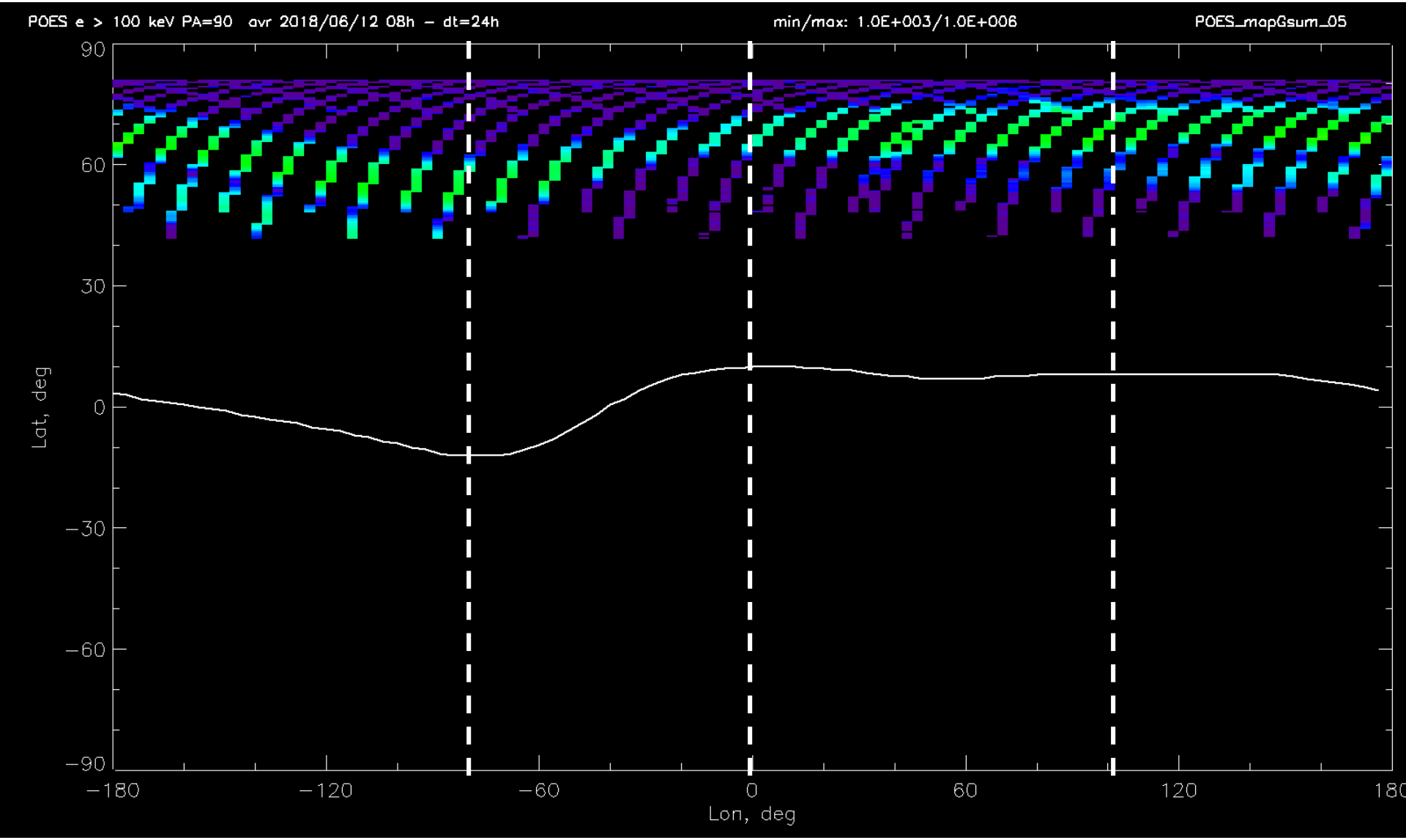
Lon, deg

Set map100


POES e > 100 keV PA=90 avr 2018/06/12 08h – dt=24h
min/max: 1.0E+003/1.0E+008
POES_mapGsum_05
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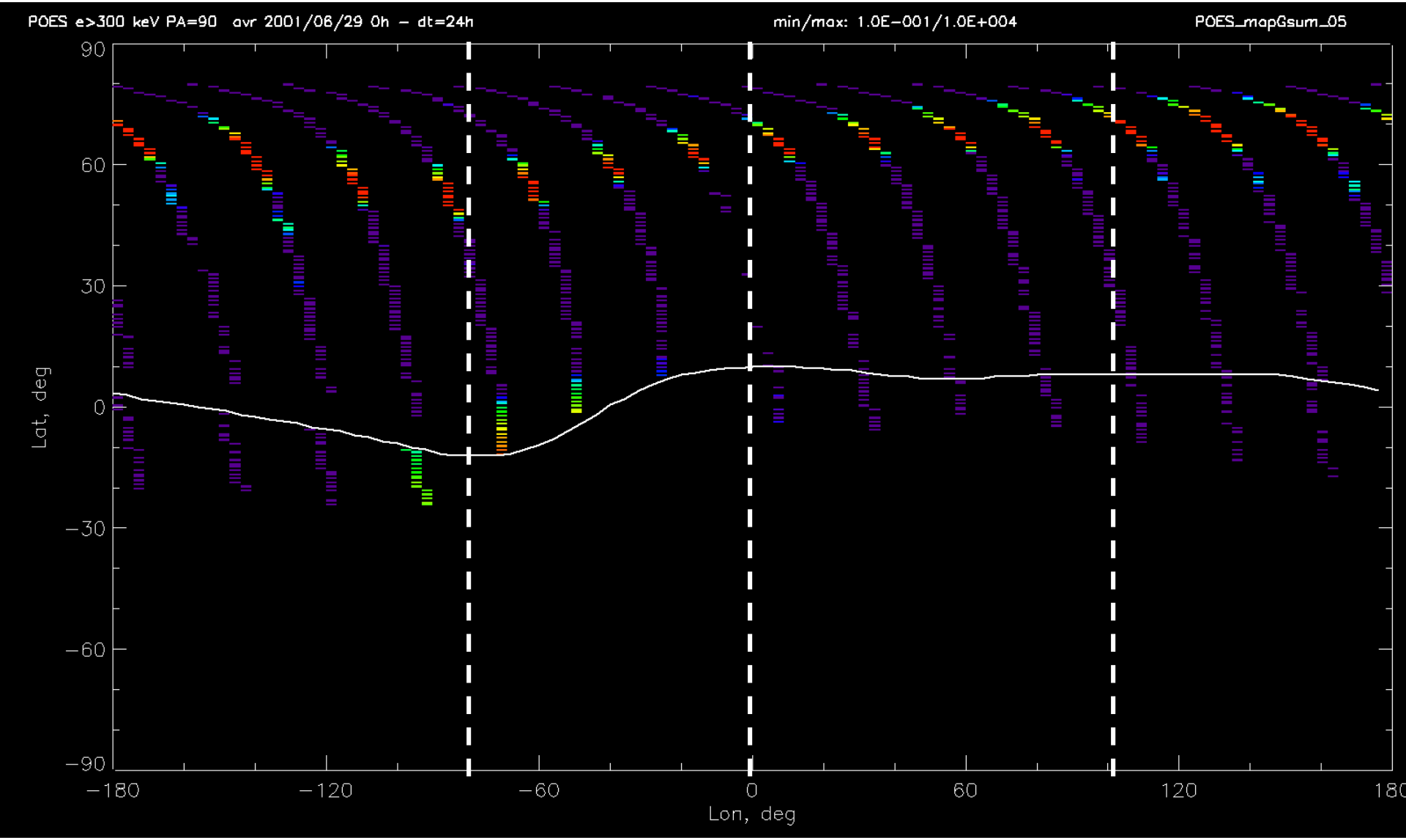
Lon, deg

Set map300


POES e>300 keV PA=90 avr 2001/06/29 0h – dt=24h
min/max: 1.0E-001/1.0E+004
POES_mapGsum_05
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Lat, deg
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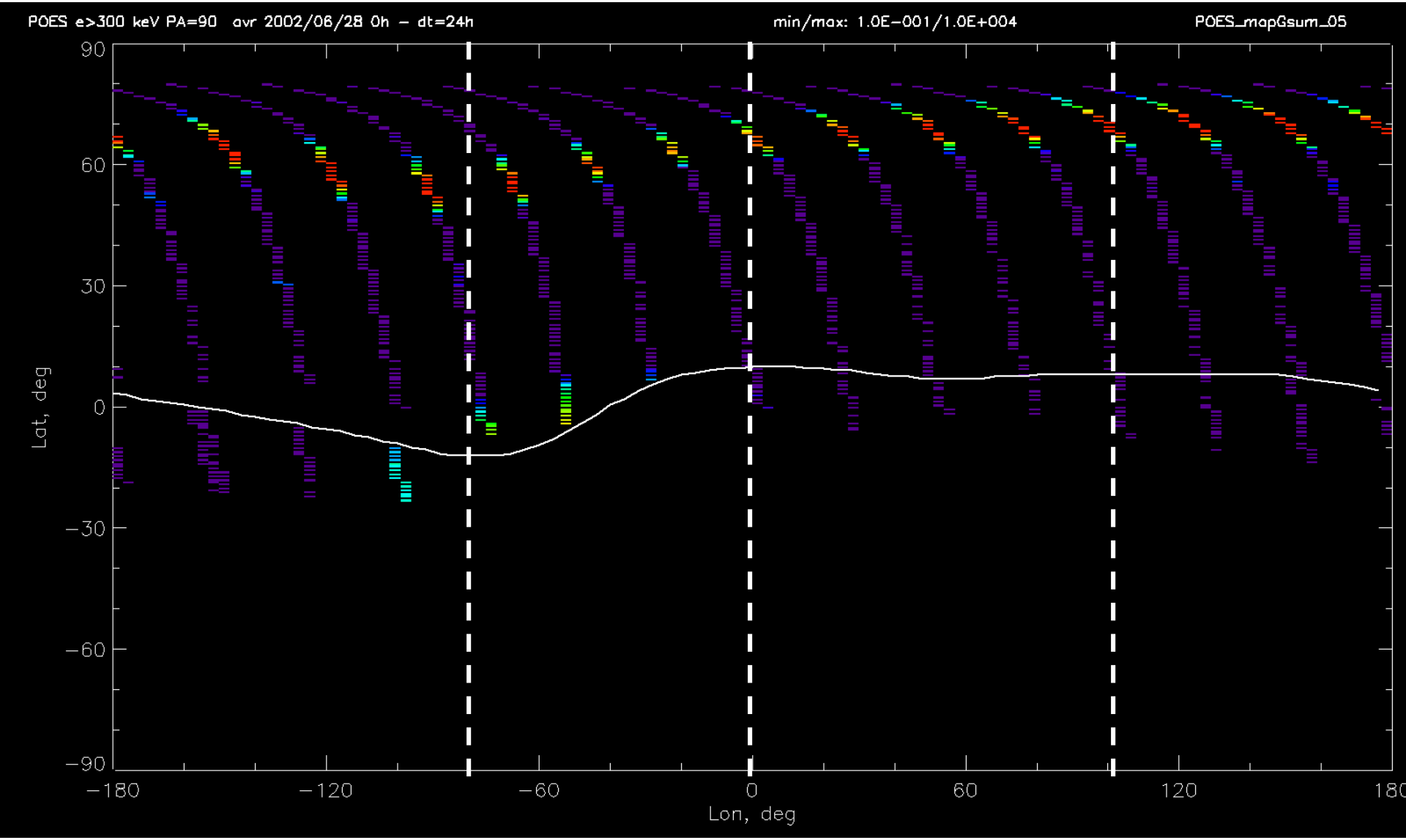
Lon, deg

Set map300


POES e>300 keV PA=90 avr 2002/06/28 0h – dt=24h
min/max: 1.0E-001/1.0E+004
POES_mapGsum_05
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0
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120
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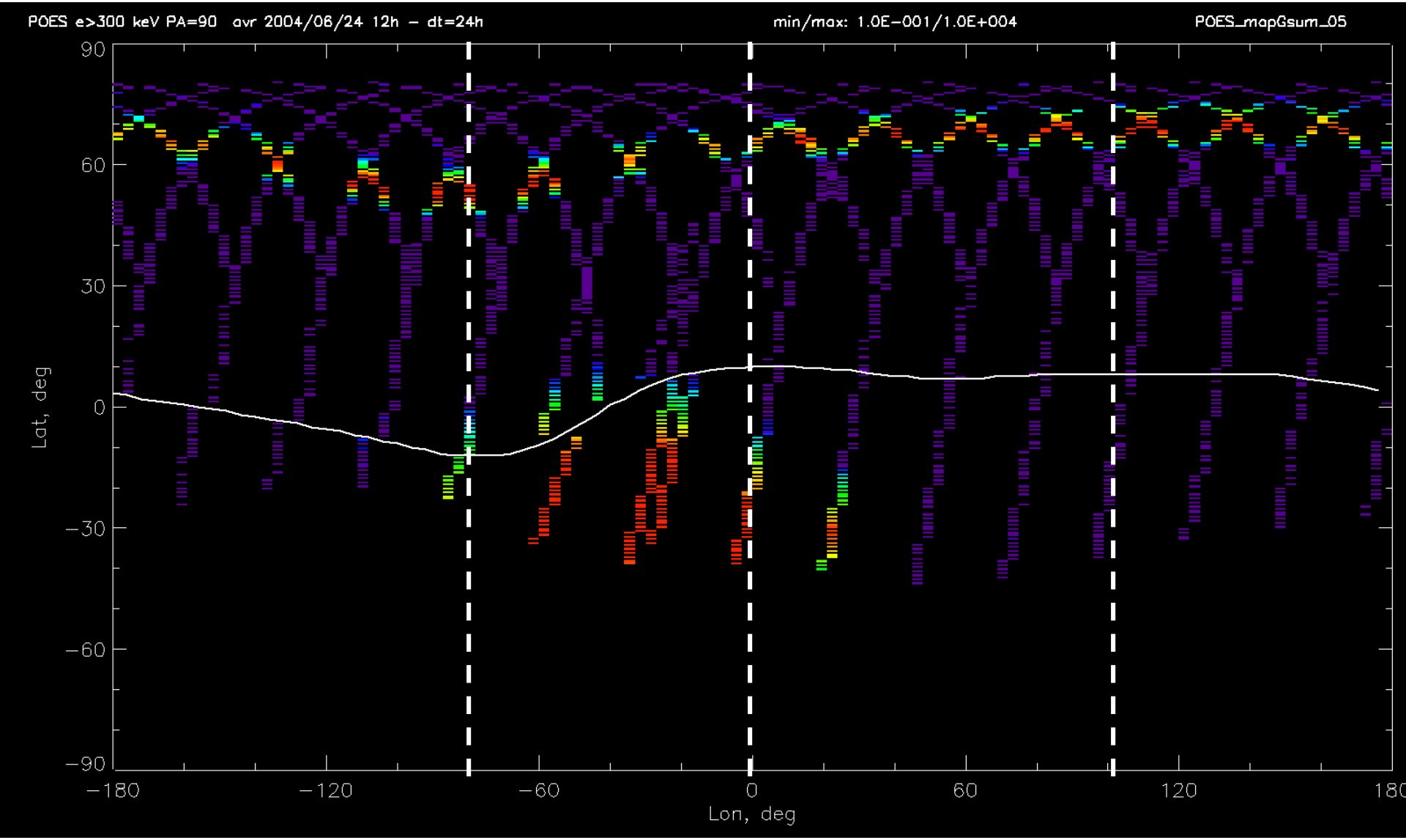
Lon, deg

Set map300


POES e>300 keV PA=90 avr 2004/06/24 12h – dt=24h
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POES_mapGsum_05
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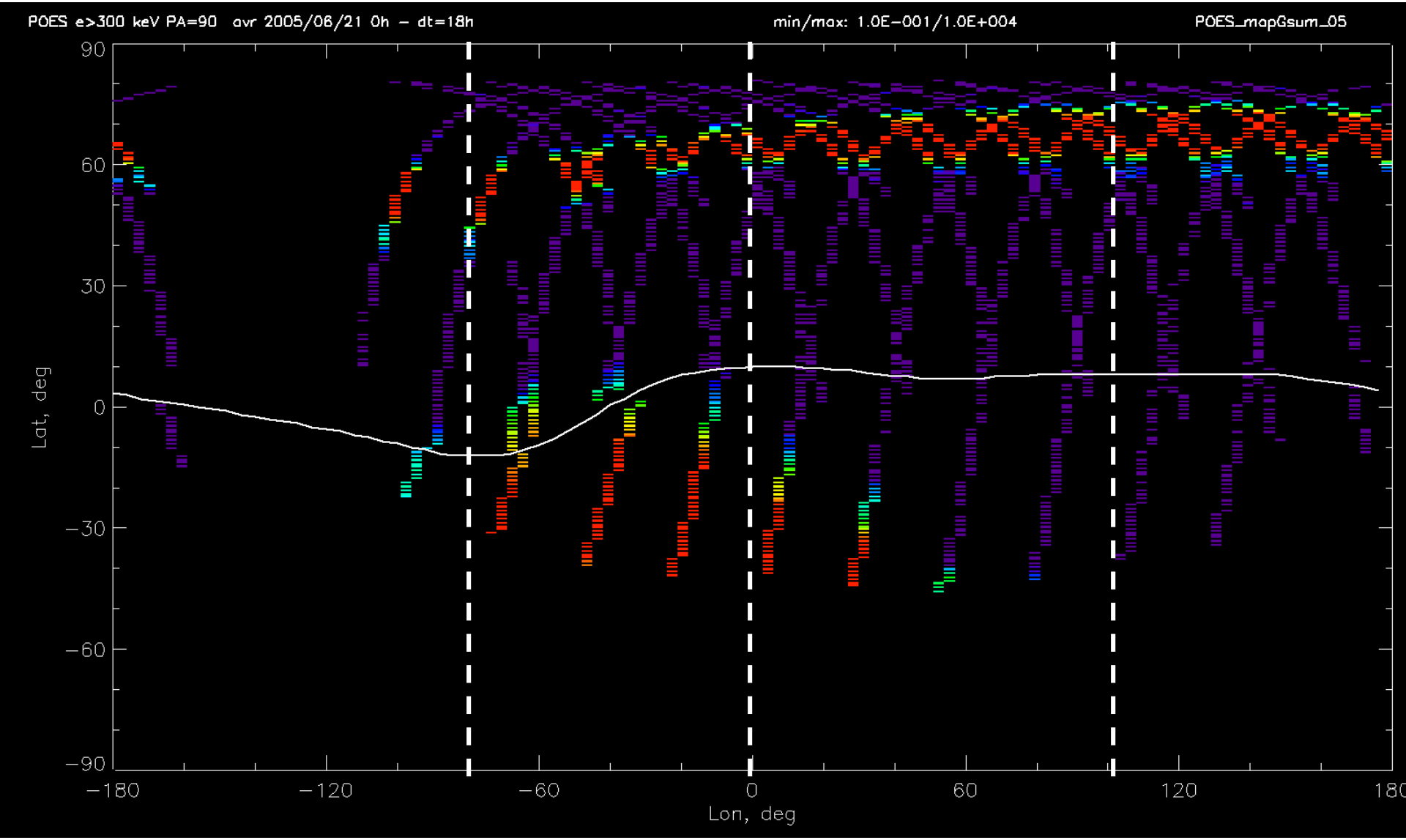
Lon, deg

Set map300


POES e>300 keV PA=90 avr 2005/06/21 0h – dt=18h
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POES_mapGsum_05
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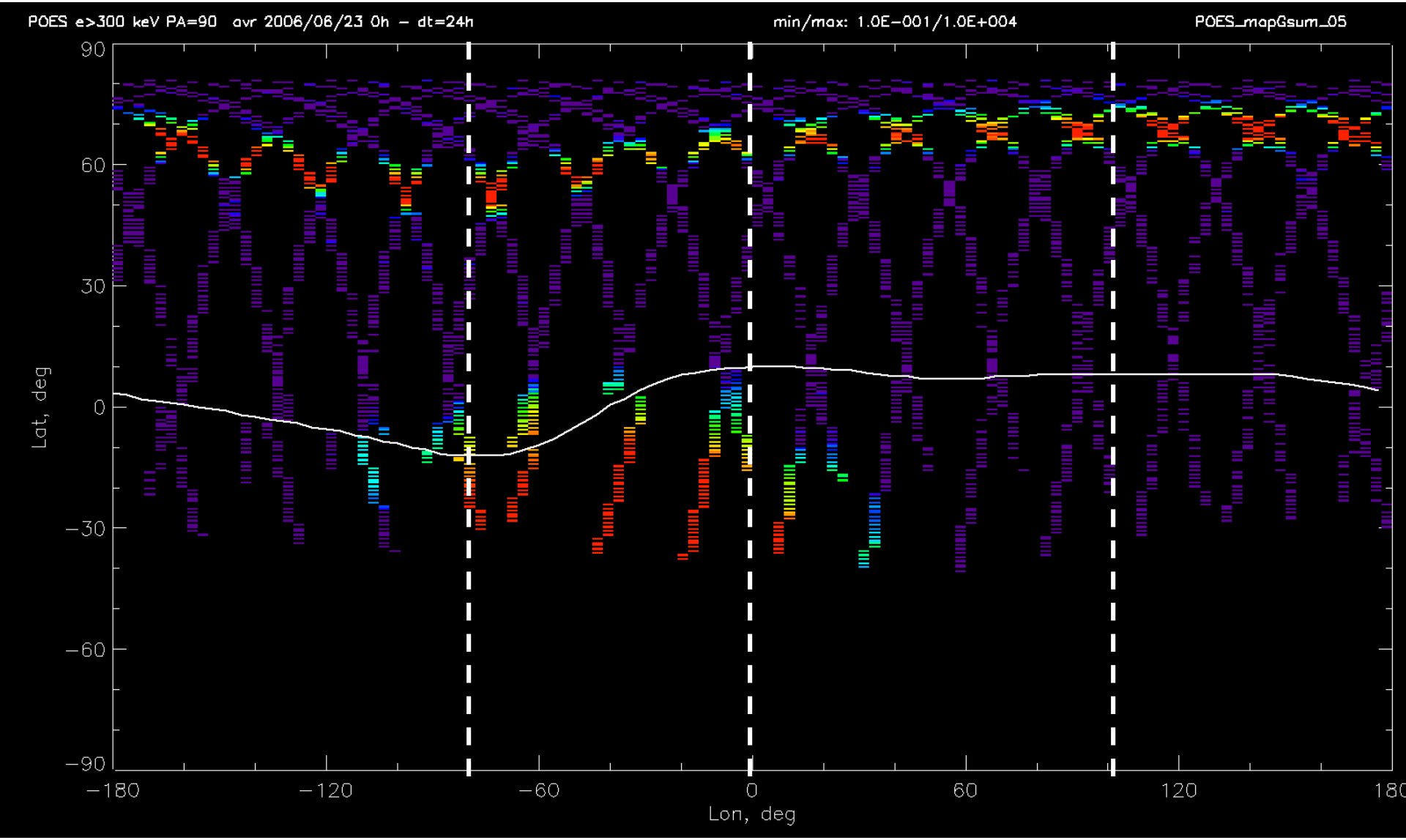
Lon, deg

Set map300


POES e>300 keV PA=90 avr 2006/06/23 0h – dt=24h
min/max: 1.0E-001/1.0E+004
POES_mapGsum_05
90
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Lat, deg
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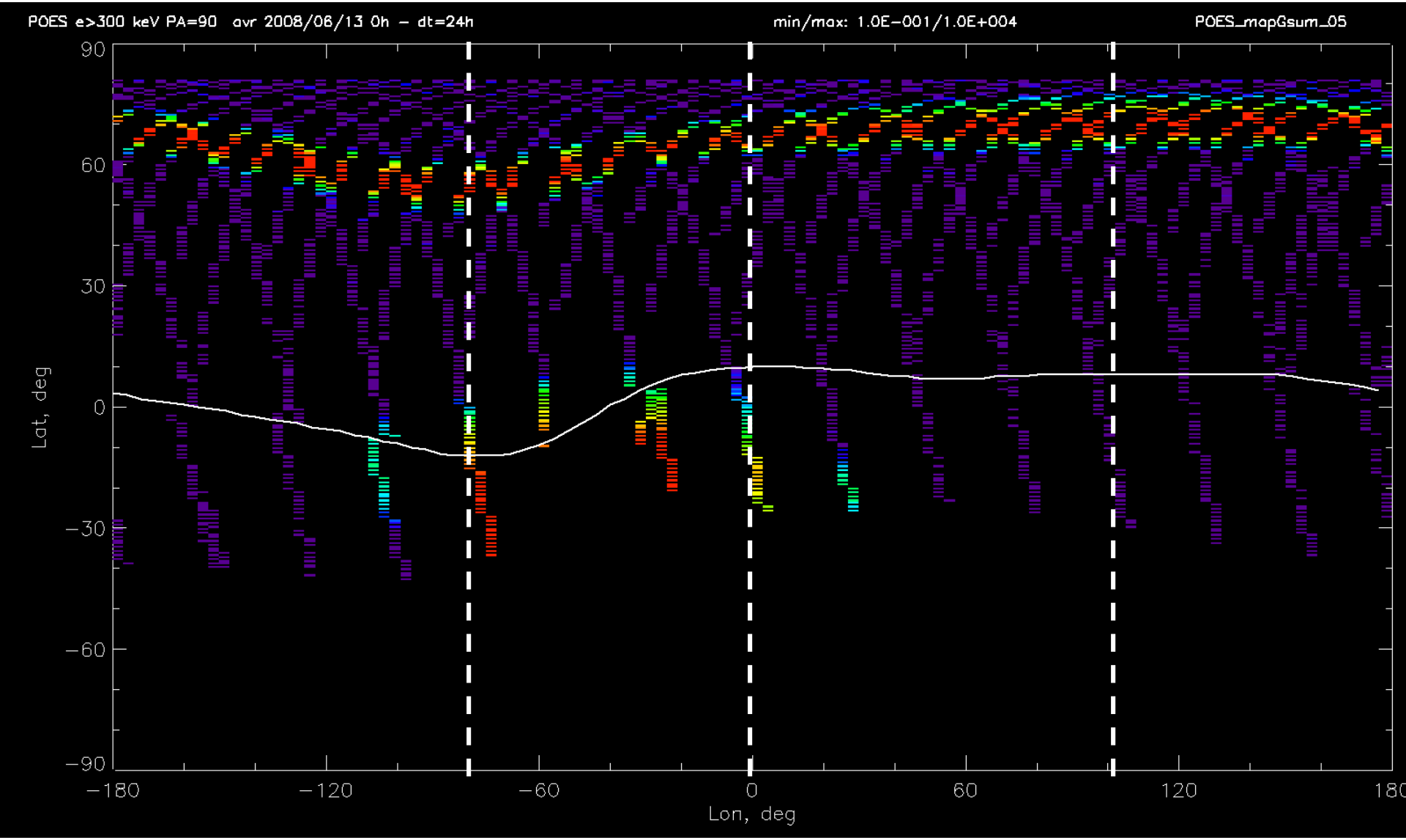
Lon, deg

Set map300


POES e>300 keV PA=90 avr 2008/06/13 0h – dt=24h
min/max: 1.0E-001/1.0E+004
POES_mapGsum_05
90
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Lat, deg
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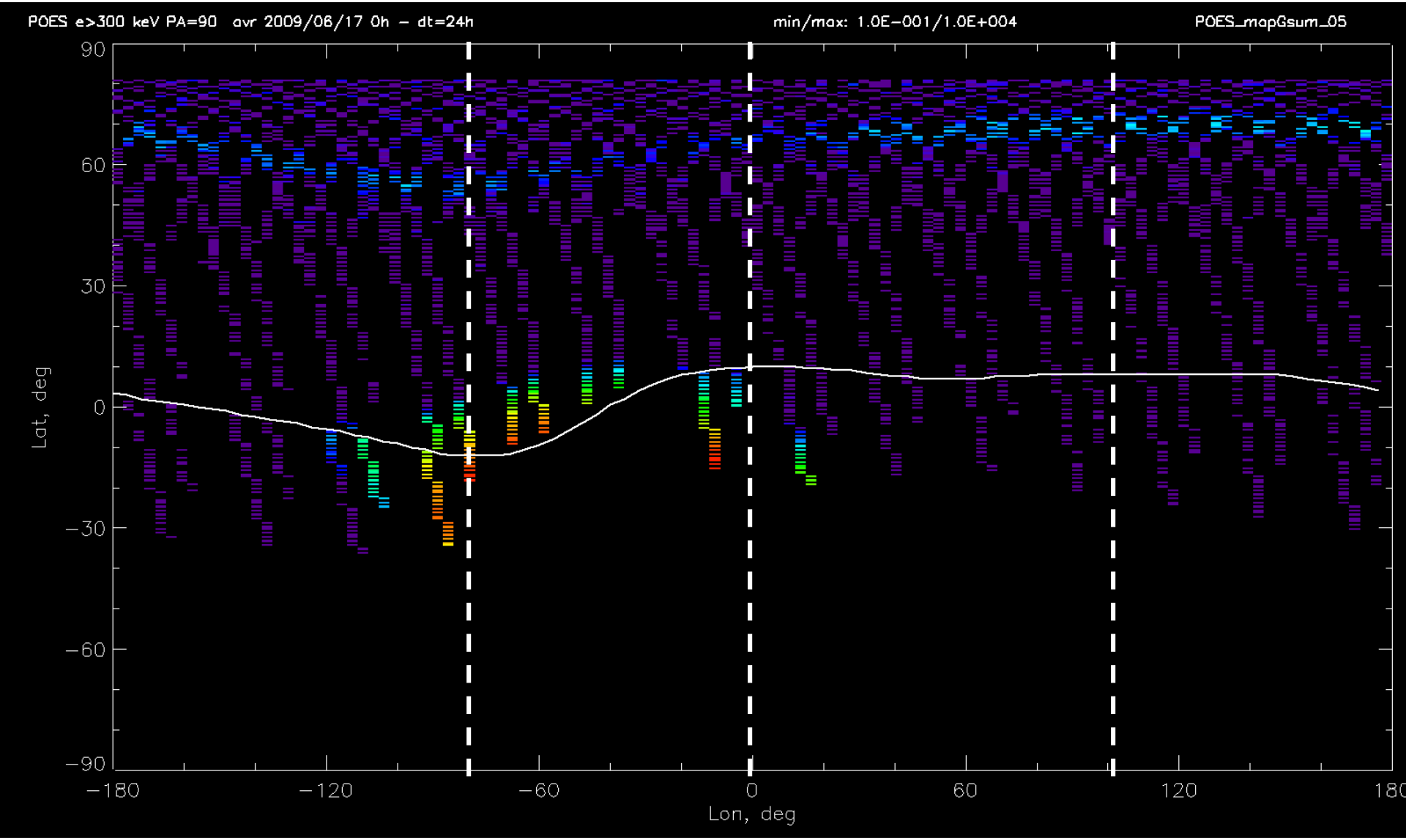
Lon, deg

Set map300


POES e>300 keV PA=90 avr 2009/06/17 0h – dt=24h
min/max: 1.0E-001/1.0E+004
POES_mapGsum_05
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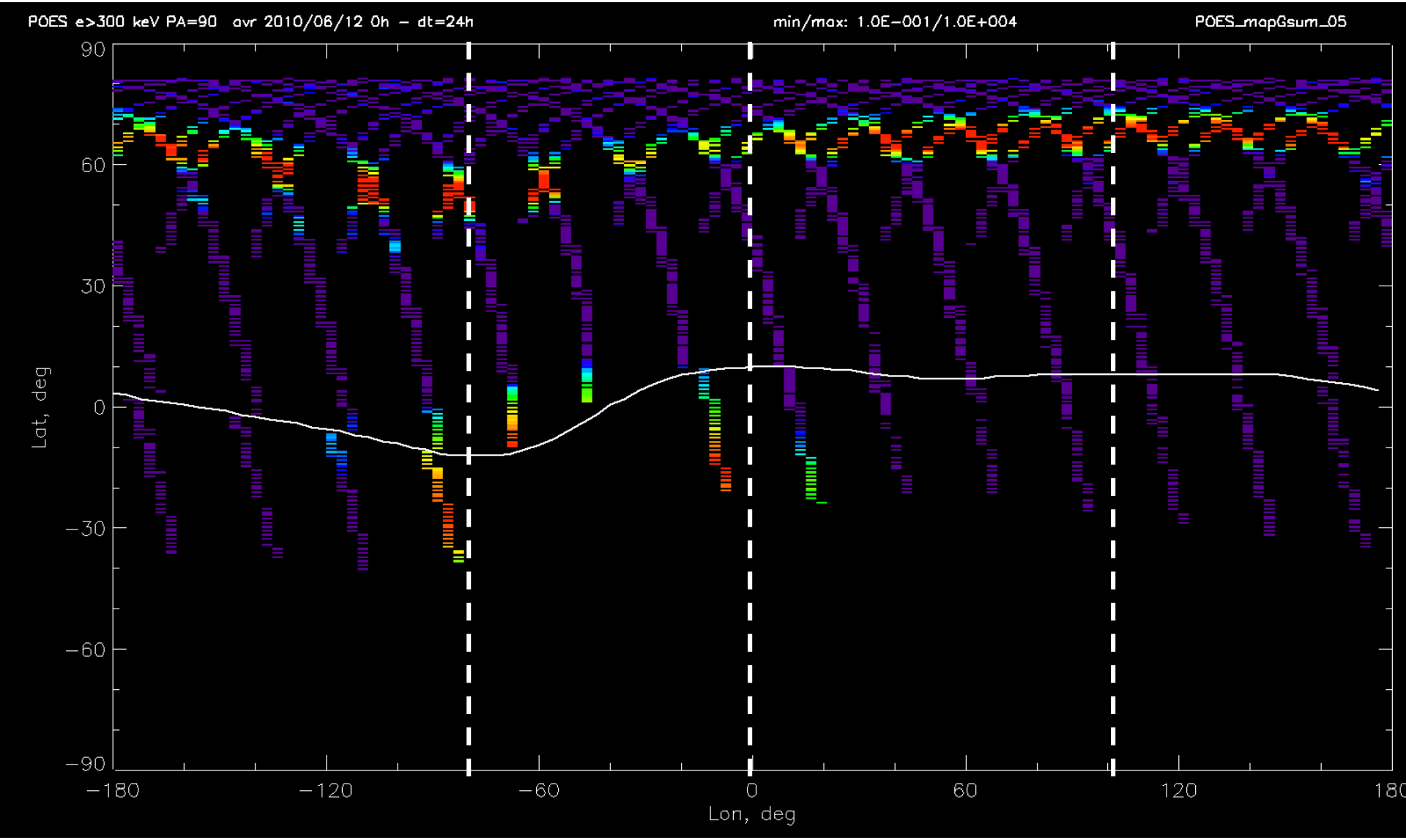
Lon, deg

Set map300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POES_mapGsum_05
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Lat, deg
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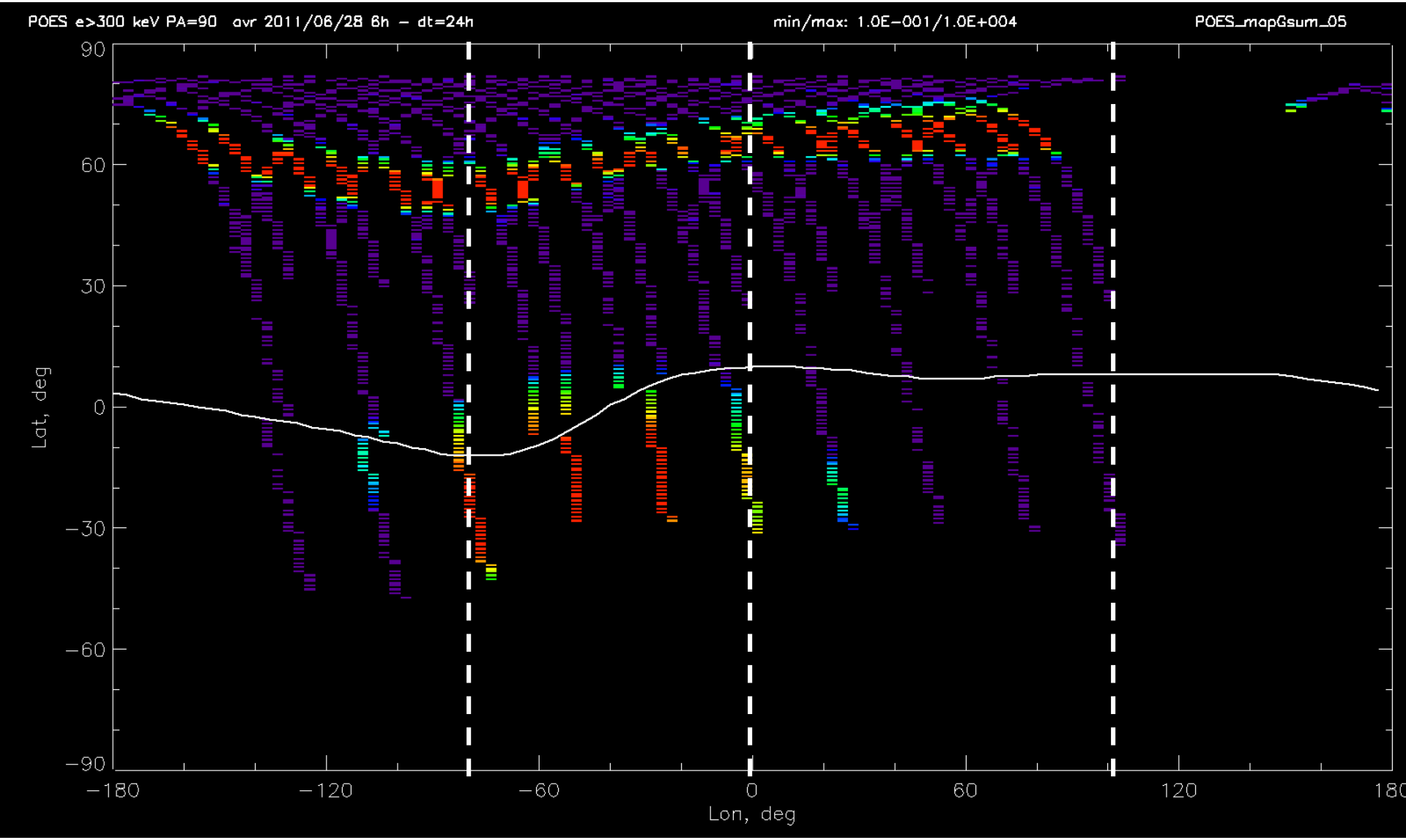
Lon, deg

Set map300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min/max: 1.0E-001/1.0E+004
POES_mapGsum_05
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Lat, deg
-180
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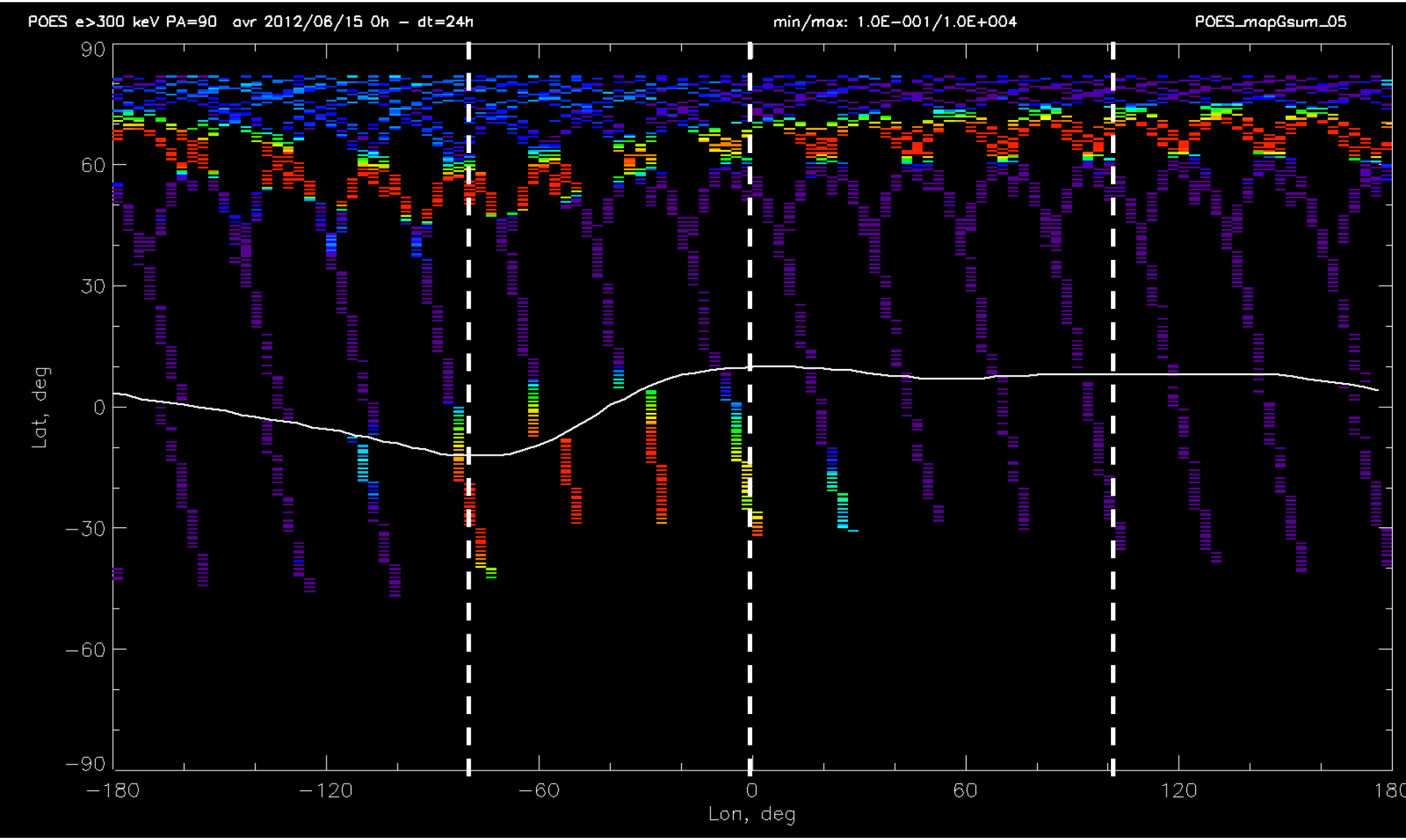
-60
0
60
120
180
Lon, deg

Set map300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min/max: 1.0E-001/1.0E+004
POES_mapGsum_05
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Lat, deg
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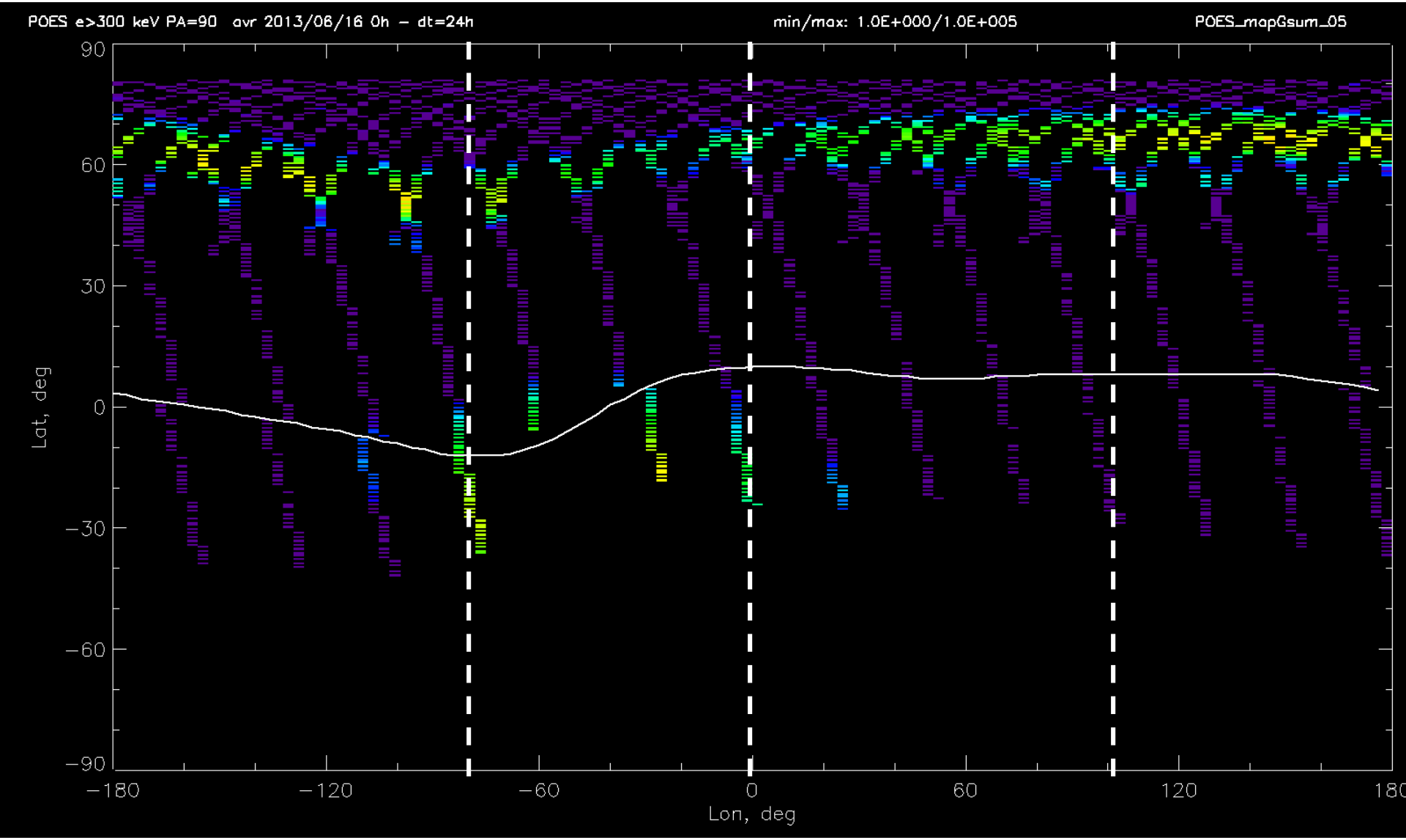
Lon, deg

Set map300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POES_mapGsum_05
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Lat, deg
−180
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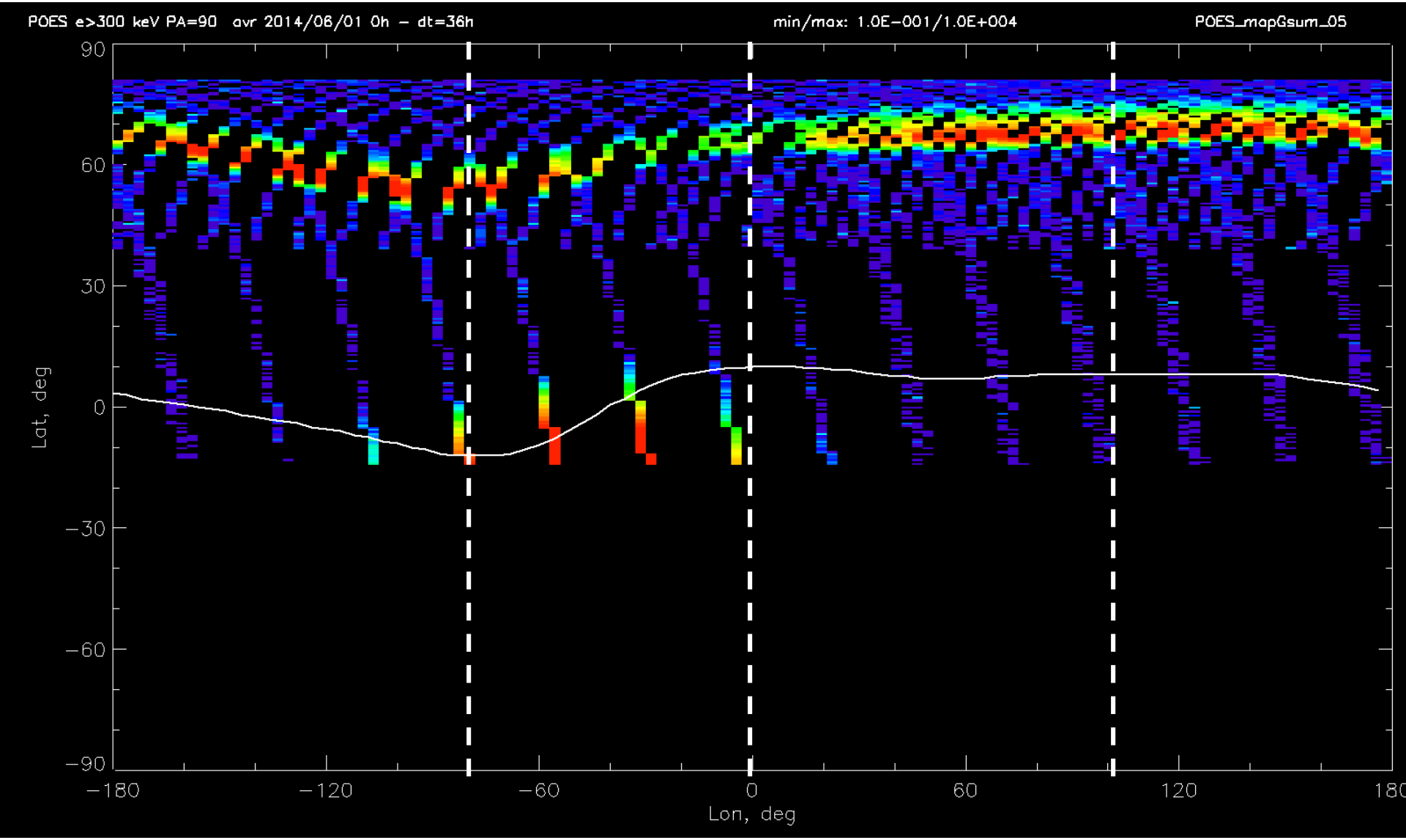
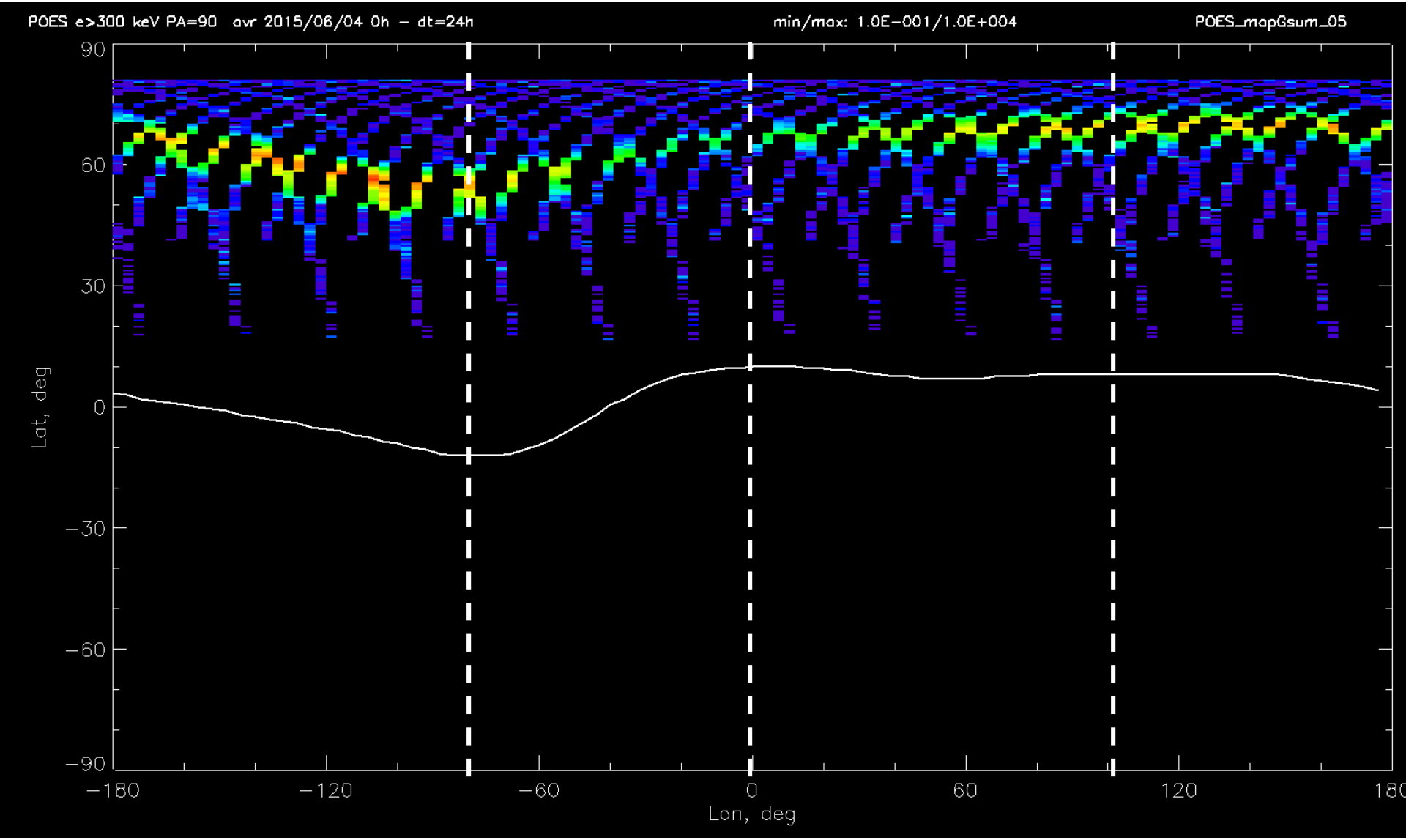
60
120
180
Lon, deg

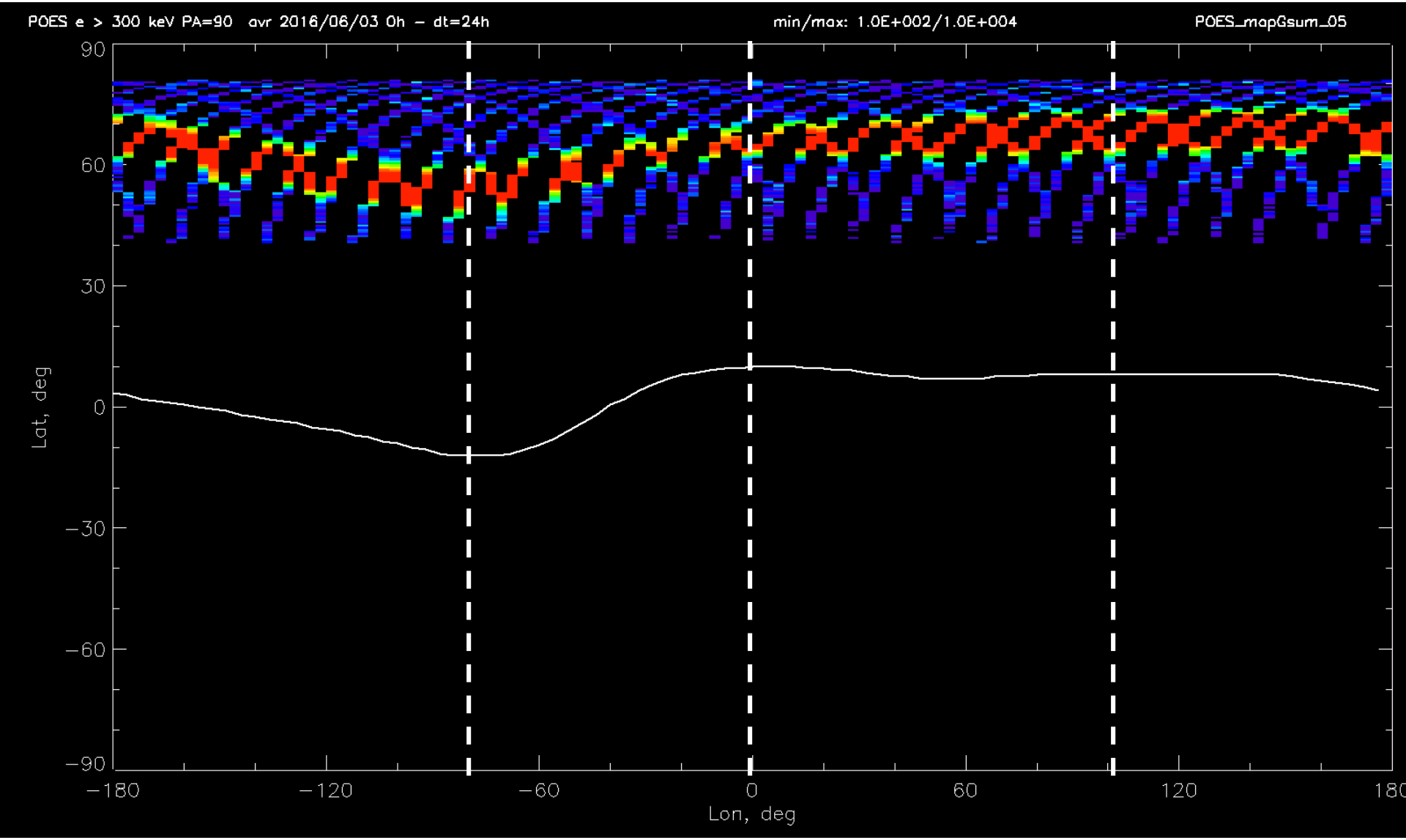
Set map300


POES e>300 keV PA=90 avr 2014/06/01 0h – dt=36h
min/max: 1.0E-001/1.0E+004
POES_mapGsum_05
90
60
30
0
−30
−60
−90
Lat, deg
−180
−120
−60
0
60
120
180
Lon, deg

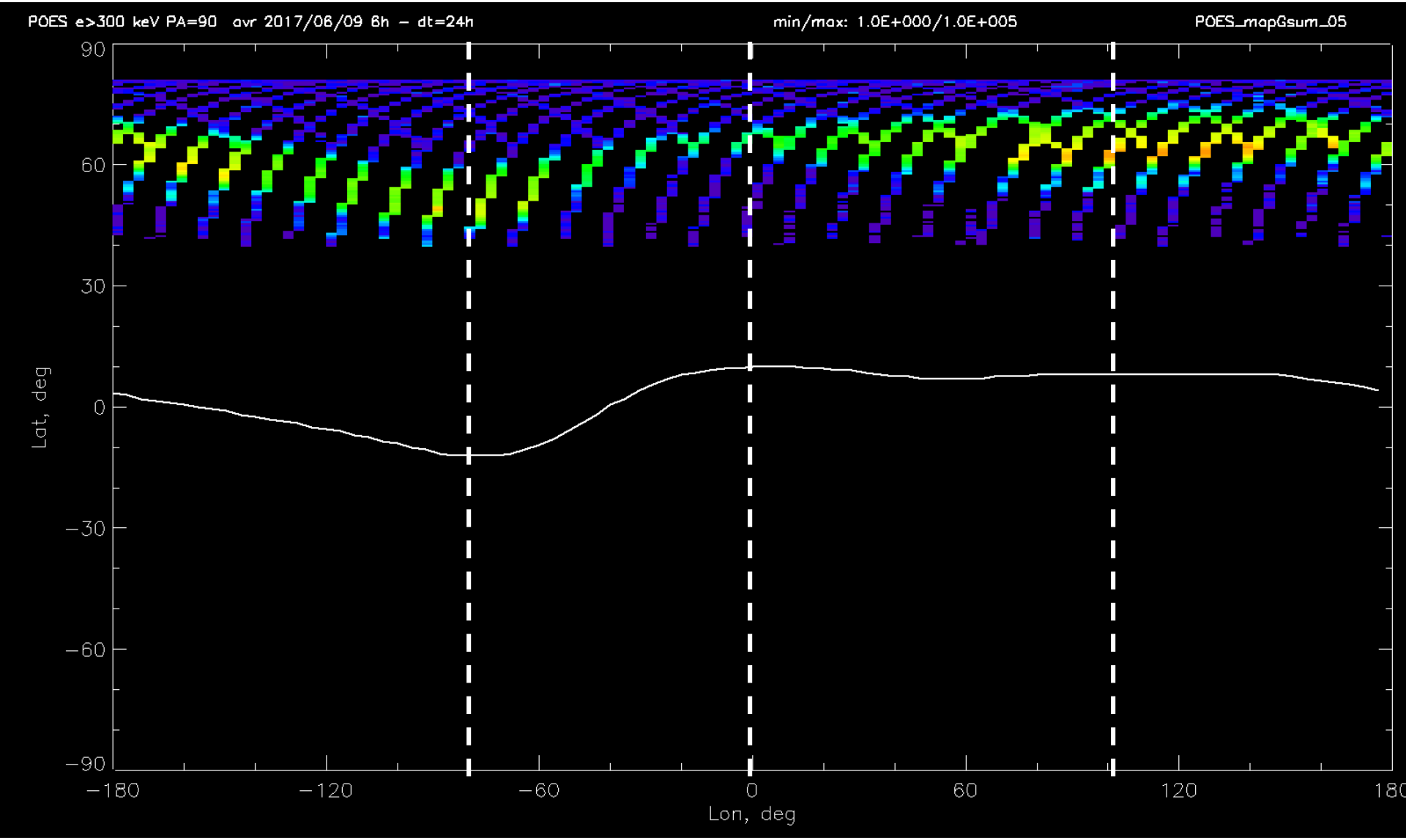
Set map300


POES e>300 keV PA=90 avr 2015/06/04 0h – dt=24h
min/max: 1.0E-001/1.0E+004
POES_mapGsum_05
90
60
30
0
−30
−60
−90
Lat, deg
−180
−120
−60
0
60
120
180
Lon, deg

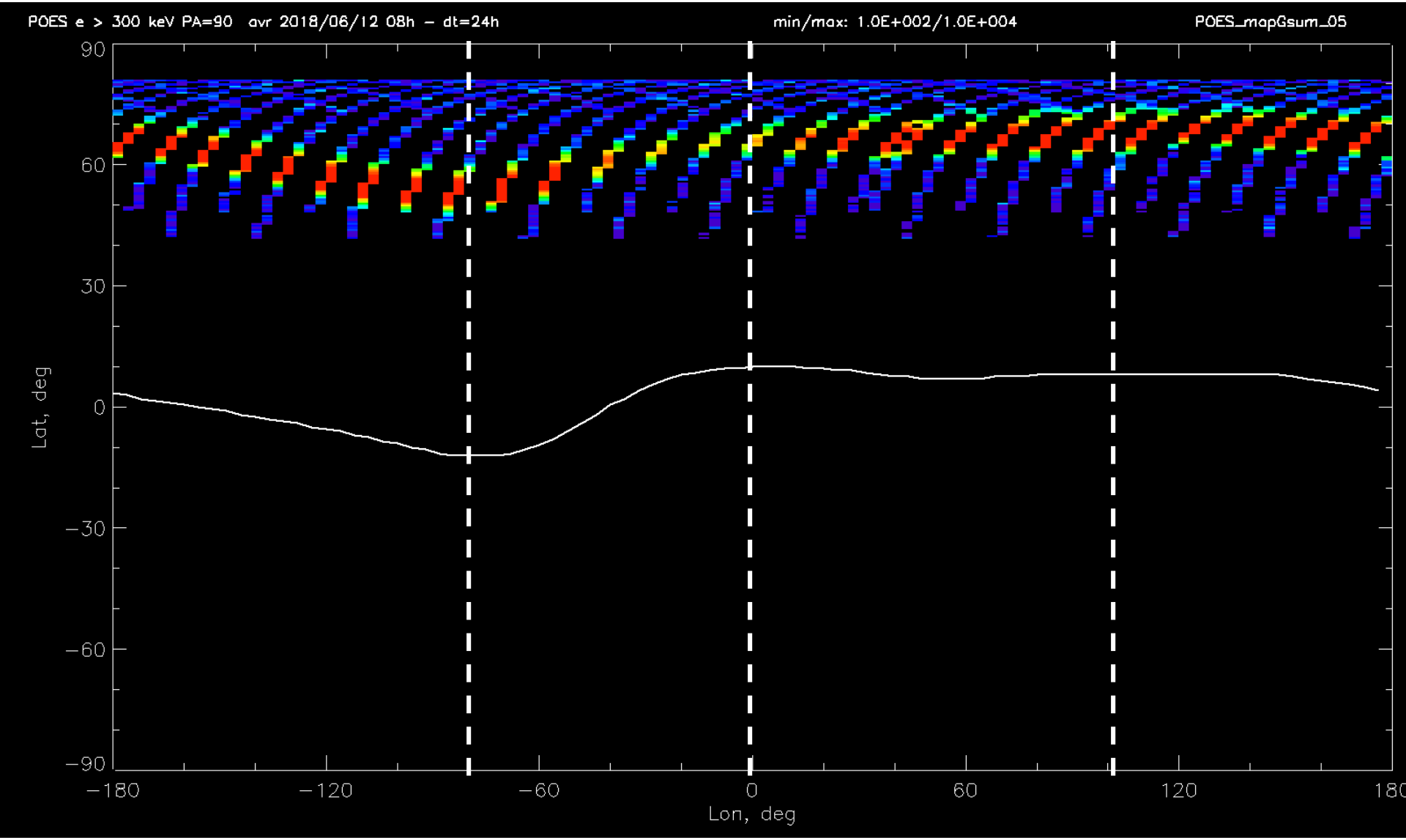
Set map300


POES e > 300 keV PA=90 avr 2016/06/03 0h – dt=24h
min/max: 1.0E+002/1.0E+004
POES_mapGsum_05
90
60
30
0
−30
−60
−90
Lat, deg
−180
−120
−60
0
60
120
180
Lon, deg

Set map300


POES e>300 keV PA=90 avr 2017/06/09 6h – dt=24h
min/max: 1.0E+000/1.0E+005
POES_mapGsum_05
90
60
30
0
−30
−60
−90
Lat, deg
−180
−120
−60
0
60
120
180
Lon, deg

Set map300


POES e > 300 keV PA=90 avr 2018/06/12 08h – dt=24h
min/max: 1.0E+002/1.0E+004
POES_mapGsum_05
90
60
30
0
−30
−60
−90
Lat, deg
−180
−120
−60
0
60
120
180
Lon, deg