

**Short presentation of a project proposal for the
5th call Space in FP7**

**Multi-purpose
Satellite Data Base**

Ludmil Bankov

Space and Solar-Terrestrial Research Institute

At Bulgarian Academy of Sciences

research centre

Bulgaria



COSMOS Matchmaking Event
18th March 2011, Sofia, Bulgaria

Draft Call Topic that the Proposal Aims at

- ***Research to support space transportation and key technologies***
 - **Key technologies enabling observations in and from space**

Short outline

Contemporary level of S&T Space Exploration simply could be characterized by the existence of huge data flows from various on orbit and/or ground based observations in the near Earth's environment. Database software significantly simplifies the data mining and decision making by the end users. Usually, such a software becomes an important part of any planned Space Mission. Here we present a Database System especially created to support ionosphere observations by various simultaneously operating satellites, which could be a basis for future evaluation under specific needs of similar Space Missions.

System's features:

- “User Friendly” entry dialogue (easy to use)
- Multi-satellite, multi-instrument, various input data base flows
- Adjustable input/output formats
- Fast Search within Internal and/or External Data sets
- Flexible Graphics Output (expandable)

“User Friendly” entry dialogue

Created by Ludmil Bankov Space and Solar-Terrestrial Research Institute - BAS E-mail: lbankov@space.bas.bg

Select the Satellite: 4 "DEMETER IAP-Instrument only"

MULTI-SATELLITE DATABASE
Created by L. Bankov
SSTRI-BAS E-mail: lbankov@space.bas.bg

RUN DataBase Search

Select GRAPHICS or FILE output:
☒ Graphics Output OR ☐ File Output

Select Output Graphics Type: 2 "Standard 3D (color bars Z-axes)"

To continue from last dialogue ? PUSH HERE!

Cancel

Select Number of Panels: ☐ 1 ☐ 2 ☐ 3 ☒ 4

X parameters per panel

Graphics field (1) X1	5.GLONG	Xmin= 0.00	Xmax= 360.00	Tics= 4	lin	Nel= 36
Graphics field (2) X2	5.GLONG	Xmin= 0.00	Xmax= 360.00	Tics= 4	lin	Nel= 36
Graphics field (3) X3	5.GLONG	Xmin= 0.00	Xmax= 360.00	Tics= 4	lin	Nel= 36
Graphics field (4) X4	5.GLONG	Xmin= 0.00	Xmax= 360.00	Tics= 4	lin	Nel= 36

Y parameters per panel

Graphics field(1) Y1	4.GLAT	Ymin= -50.00	Ymax= 50.00	Tics= 4	lin	Nel= 40
Graphics field(2) Y2	4.GLAT	Ymin= -50.00	Ymax= 50.00	Tics= 4	lin	Nel= 40
Graphics field(3) Y3	4.GLAT	Ymin= -50.00	Ymax= 50.00	Tics= 4	lin	Nel= 40
Graphics field(4) Y4	4.GLAT	Ymin= -50.00	Ymax= 50.00	Tics= 4	lin	Nel= 40

Z parameters per panel (Colour Bars)

Graphics field(1) Z1	23.H+/O+	Zmin= 0.10	Zmax= 10.00	Levels= 4	log
Graphics field(2) Z2	18.Ti	Zmin= 500.00	Zmax= 3000.00	Levels= 4	lin
Graphics field(3) Z3	19.Vxram	Zmin= -250.00	Zmax= 250.00	Levels= 4	lin
Graphics field(4) Z4	21.Vz	Zmin= -2.50	Zmax= 2.50	Levels= 4	lin

Select 'Internal Search Parameters' (ISP)

Select Number of 'Internal Search Parameters': ☐ 1 ☐ 2 ☒ 3 ☐ 4 ☐ 5 ☐ 6

ISPar (1) =	1.DATE	min = 6232.00	max = 6293.00
ISPar (2) =	8. LST	min = 12.00	max = 24.00
ISPar (3) =	15.O+	min = 10.00	max = 100000.00
ISPar (4) =		min =	max =
ISPar (5) =		min =	max =
ISPar (6) =		min =	max =

Select 'External Search Parameters' (ESP)

Select External DataBase: 2 "Combined OMNI/NEIC file "

Select Search Type: 1 "Inside window search "

UT (hh) window to link vs satellite data UTmin: -0.55 UTmax: 0.55

Select Number of 'External Search Parameters': ☐ 1 ☐ 2 ☒ 3 ☐ 4 ☐ 5 ☐ 6

External Search Par (1) =	1.YYEAR yyddd	min = 6232.00	max = 6293.00
External Search Par (2) =	40.DST	min = -50.00	max = 0.00
External Search Par (3) =	49.daily F10.7	min = 70.00	max = 130.00
External Search Par (4) =		min =	max =
External Search Par (5) =		min =	max =
External Search Par (6) =		min =	max =

Multi-satellite, multi-instrument, various input data flows, drop-list menu

Created by Ludmil Bankov Space and Solar-Terrestrial Research Institute - BAS E-mail: lbankov

Select the Satellite:
 4 "DEMETER IAP-Instrument only"
 1 "DMSP-F13 IDM/RPA/SLP instrument"
 2 "DMSP-F14 IDM/RPA/SLP instrument"
 3 "DMSP-F15 IDM/RPA/SLP instrument"
 4 "DEMETER IAP-Instrument only"

Select Output Graphics Type: 2 "Standard 3D (color bars Z-axes)"

Select Number of Panels: ☐ 1 ☐ 2 ☐ 3 ☒ 4

X parameters per panel:

Graphics field (1)	X1	5.GLONG	Xmin=	0.00	Xmax=	360.00	Tics=	4	lin	Nel=	36
Graphics field (2)	X2	5.GLONG	Xmin=	0.00	Xmax=	360.00	Tics=	4	lin	Nel=	36
Graphics field (3)	X3	5.GLONG	Xmin=	0.00	Xmax=	360.00	Tics=	4	lin	Nel=	36
Graphics field (4)	X4	5.GLONG	Xmin=	0.00	Xmax=	360.00	Tics=	4	lin	Nel=	36

MULTI-SATELLITE
Created by L
SSTRI-BAS E-mail:lbar

To continue from last dial

Fast Internal Search over up to six internal geophysical and/or measured parameters...vs..

Select 'Internal Search Parameters' (ISP)

Select Number of 'Internal Search Parameters': ☐ 1 ☐ 2 ☒ 3 ☐ 4 ☐ 5 ☐ 6

ISPar (1) =	1.DATE	min =	6232.00	max =	6293.00
ISPar (2) =	10.INCL	min =	12.00	max =	24.00
ISPar (3) =	11.DECL	min =	10.00	max =	100000.00
ISPar (4) =	12.Babs	min =		max =	
ISPar (5) =	13.GMLAT	min =		max =	
ISPar (6) =	14.Ni	min =		max =	
	15.O+				
	16.He+				

Select 'External Search Parameters' (ESP)

Select External DataBase: 2 "Combined OMNI/NEIC file "

Select Search Type: 1 "Inside window search "

UT (hh) window to link vs satellite data UTmin: -0.55 UTmax: 0.55

..External Search over up to six external database parameters

Select 'External Search Parameters' (ESP)

Select External DataBase: 2 "Combined OMNI/NEIC file "

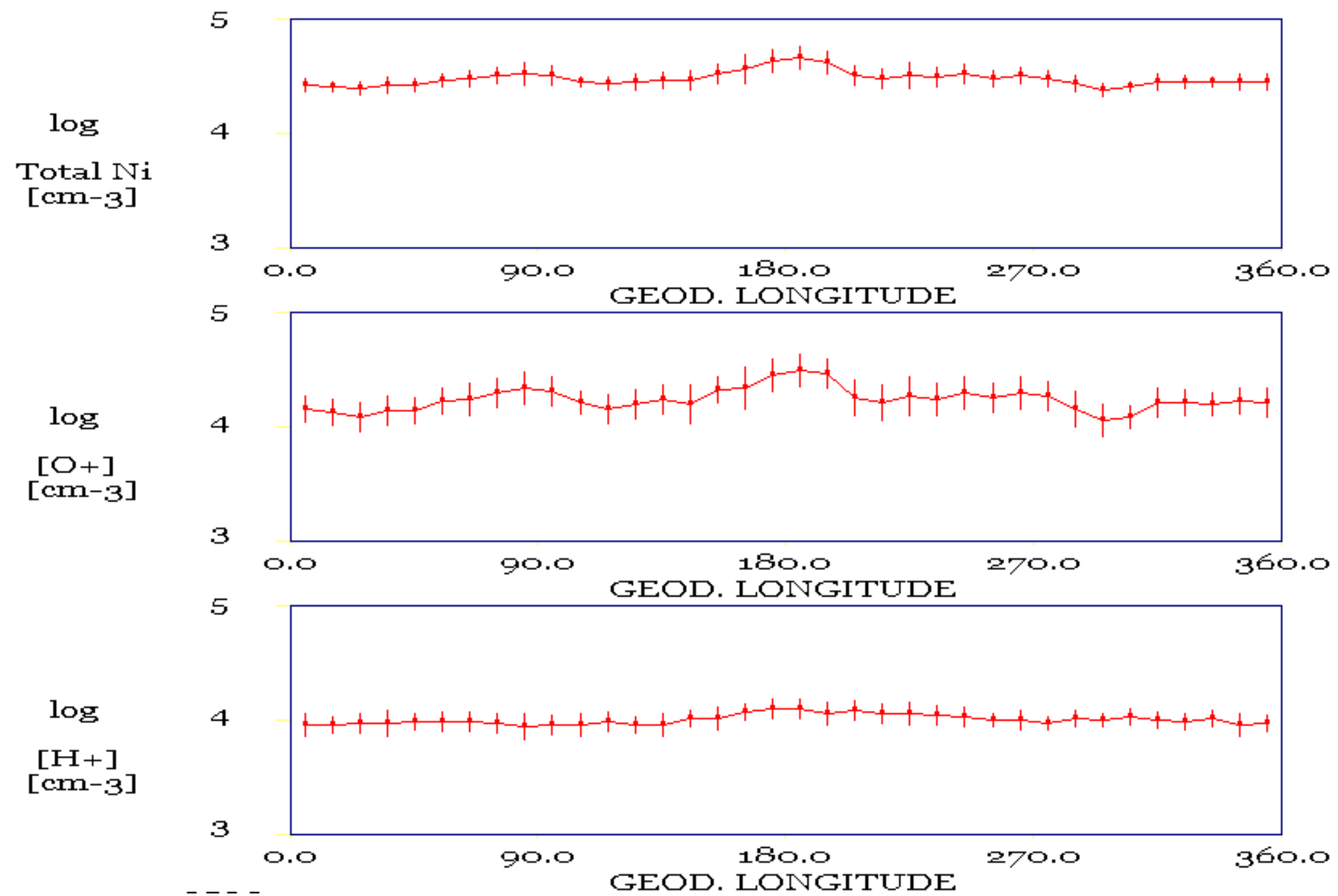
Select Search Type: 1 "Inside window search "

UT (hh) window to link vs satellite data UTmin: -0.55 UTmax: 0.55

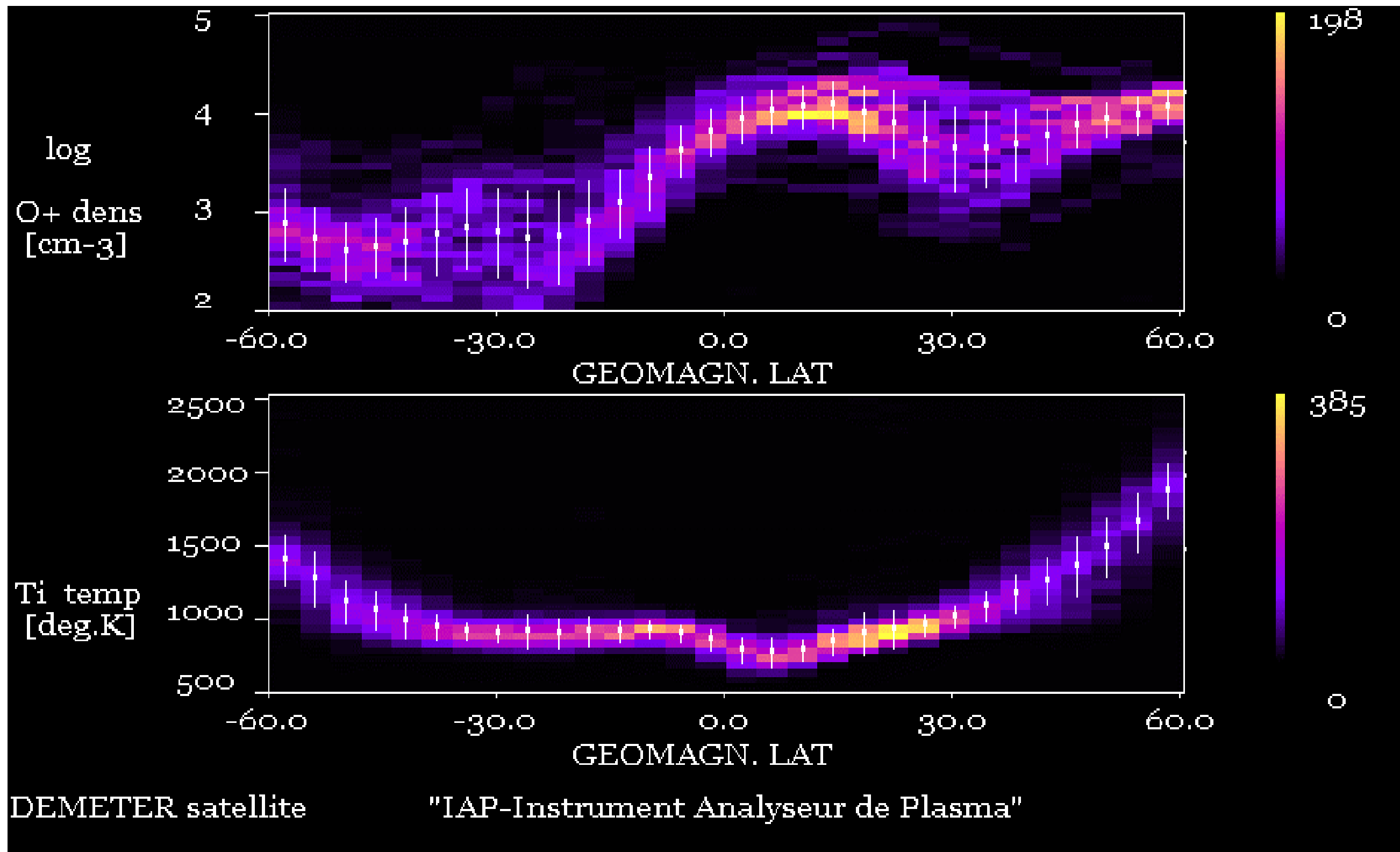
Select Number of 'External Search Parameters': ☐ 1 ☐ 2 ☒ 3 ☐ 4 ☐ 5 ☐ 6

External Search Par (1) =	1.JYEAR yyddd	min =	6232.00	max =	6293.00
External Search Par (2) =	40.DST	min =	-50.00	max =	0.00
External Search Par (3) =	49.F10.7 flux	min =	70.00	max =	130.00
External Search Par (4) =		min =		max =	
External Search Par (5) =		min =		max =	
External Search Par (6) =		min =		max =	

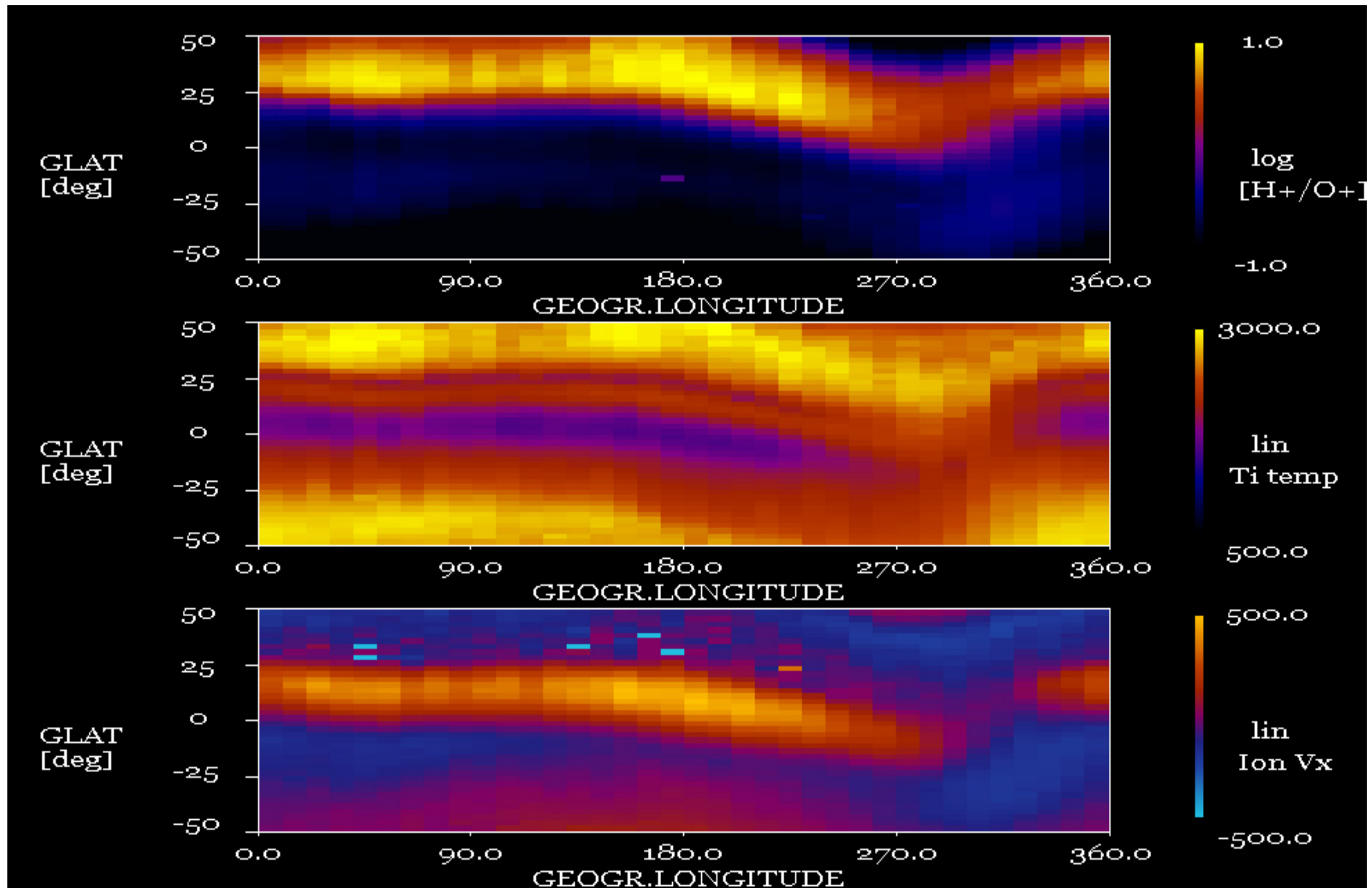
Graphics Output (classic 2D with STD)



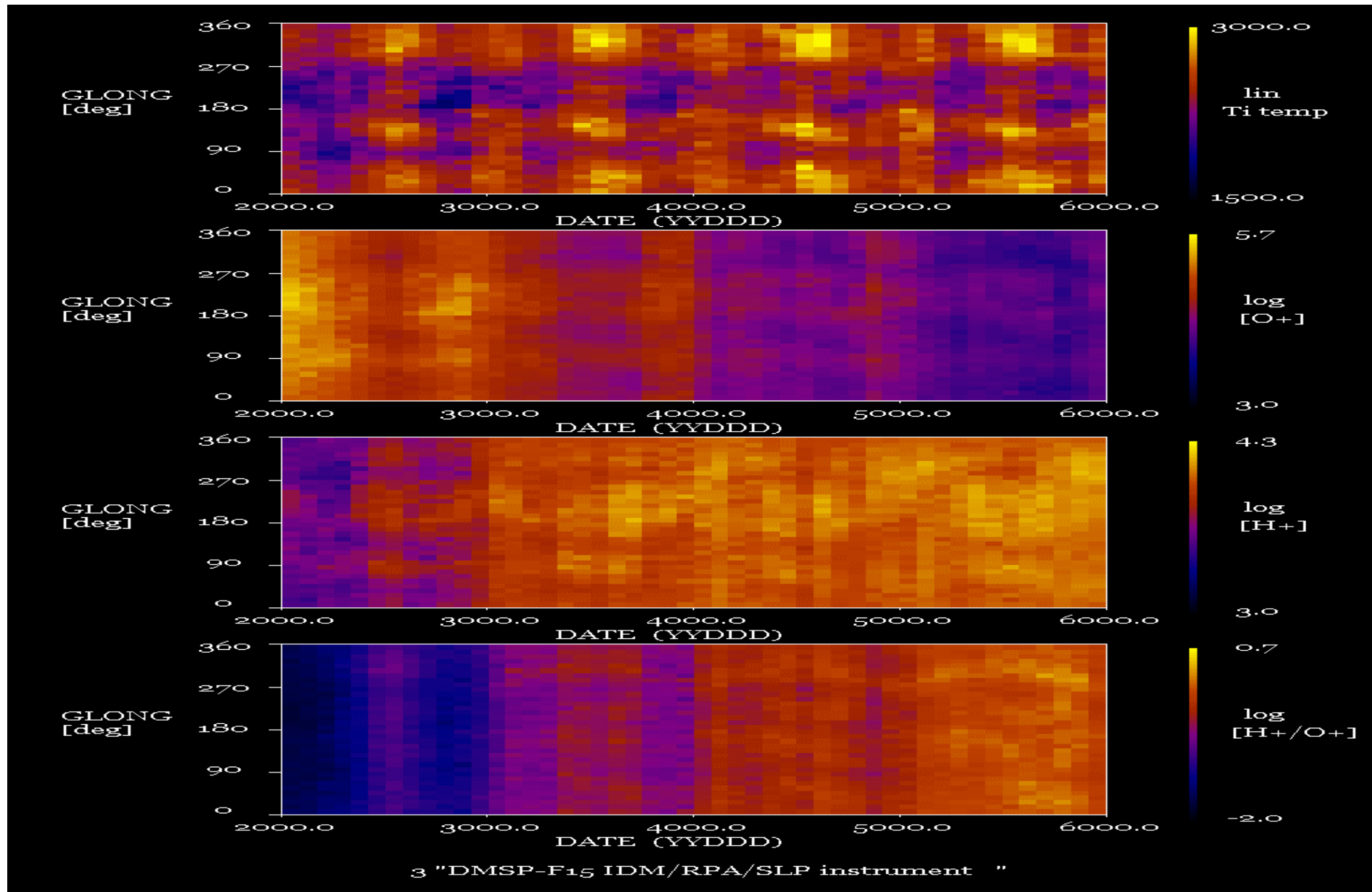
Graphics Output (example)



Graphics Output (3D example)



Graphics Output (3D example)



Space and Solar-Terrestrial Research Institute

Contact person: Ludmil Bankov

- E-mail: ludmil.bankov@gmail.com
- Phone: +3592 979 3465
- Mobile: 088 77 11 00 4

Thank you for your attention!