

Web Visualization:

Web interface 3D Magnetosphere

BATS-R-US, UCLA-GGCM

Operation:

slice plots:

Specify slice location, plot area
variables (up to 3)

-> color, arrows and / or
contour lines

3D view (multicont9):

color plot on up to 9 slices within
3D plot area

File Edit View Go Communicator Help

Location: http://ccmc/cgi-bin/run_idl3d.cgi?dir=5 What's Related

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Choose data time: 14:44:00

- or -

Change time by moving
-1 output steps

Choose **Plot Mode:**
Color, Vector+Flow lines

Plot Options:

Exclude region around Earth up to 6 R_E

Show simulation grid (disabled with 3D-Surface)

Interpolate data onto equidistant grid
(available with 3D-Surface and Vector; recommended for plots with Vector)

Choose **quantity** to be displayed (some **Plot Modes** require up to three choices)

Q 1: p Q 2: ux Q 3: bx

Plot Options for selected Plot Modes:

3D-Surface and MultiCont9:

View angles:
AX [-90..90]: 30 AZ [0..180]: 30

Color Contour:

Lock color range:
Min.: 1 Max.: 1

Log scale (n/rho, e or p)

MultiCont9: selected cut planes:

x-cuts left middle right

y-cuts front center back

z-cuts bottom midlevel top

Vector:
Length of arrows: 1.0

Choose Plot Area:
All **Plot Modes** except **Line Plot**: Select lower left corner of plot area on the left, and the upper right corner on the right.
Line Plot: Select start point of line on the left, the end point on the right.

X₁: -120 X₂: 24 Range: -360 ... 24 X=constant (-168

Y₁: -96 Y₂: 96 Range: -96 ... 96 Y=constant (0

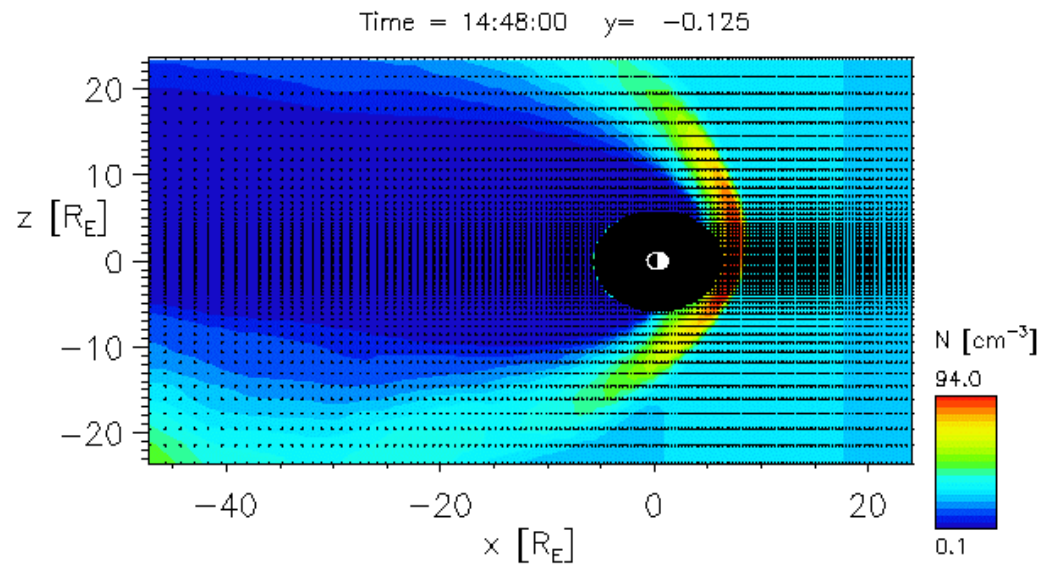
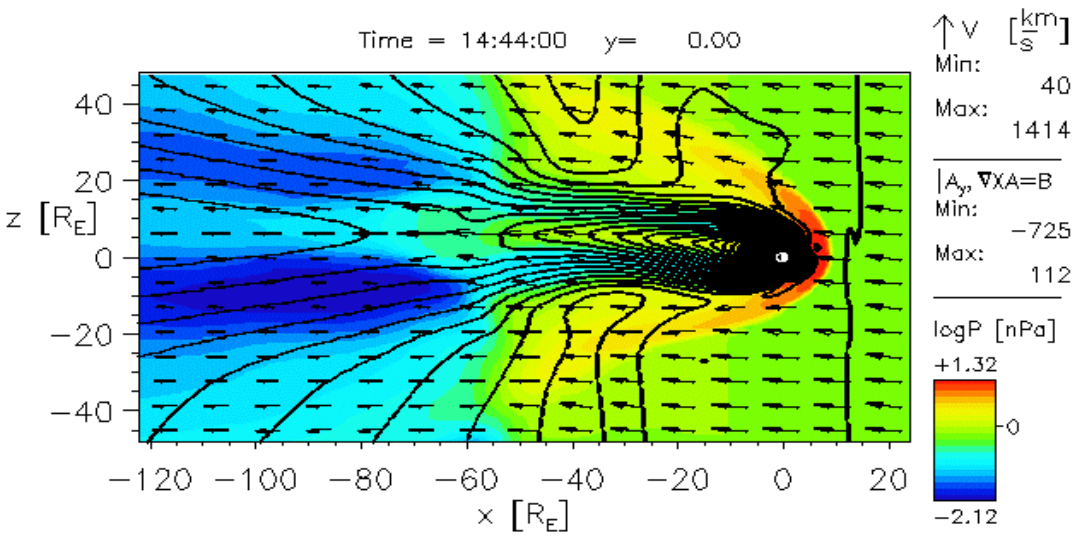
Z₁: -48 Z₂: 48 Range: -96 ... 96 Z=constant (0

Choose Cut Plane:

Reset Form *Reset Form will reset changes to the defaults specified by the previous run of this script.*

Update Plot *Update Plot will update (generate) the plot with the chosen time and plot*

100%



3d View (MultiCont9):

Variable: N, selected slices at
min(x), max(x), max(y), z=0

Slices:

BATS-R-US:

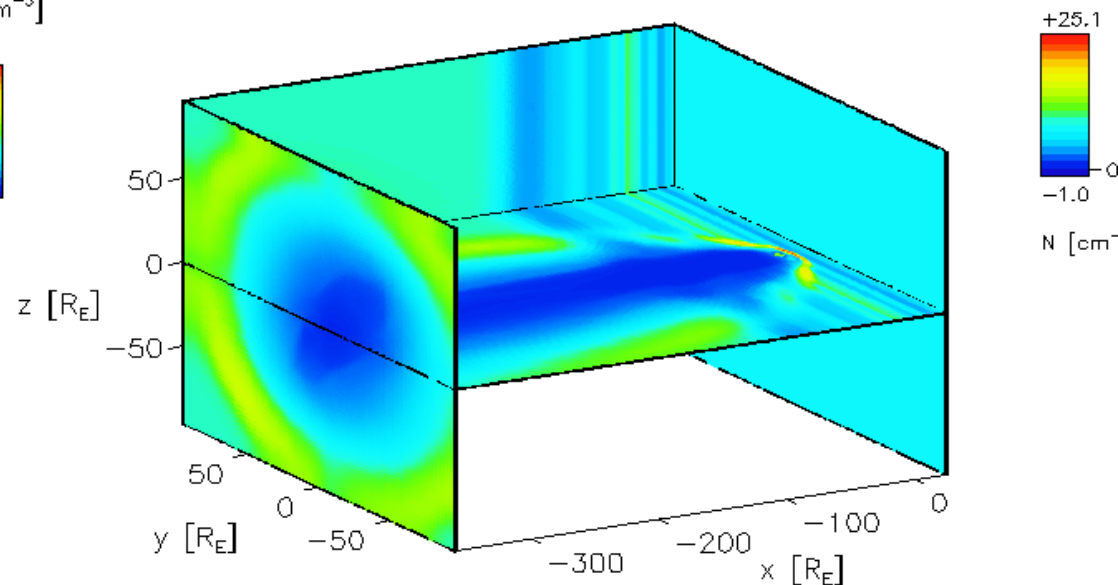
shown: log(P), V, B

Y=0 plane

$-120 < x < 24, |z| < 48$

UCLA-GGCM:

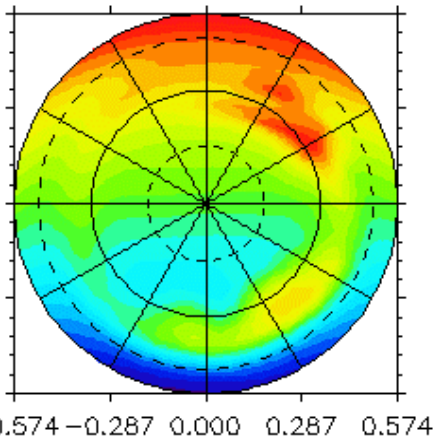
shown: N, grid



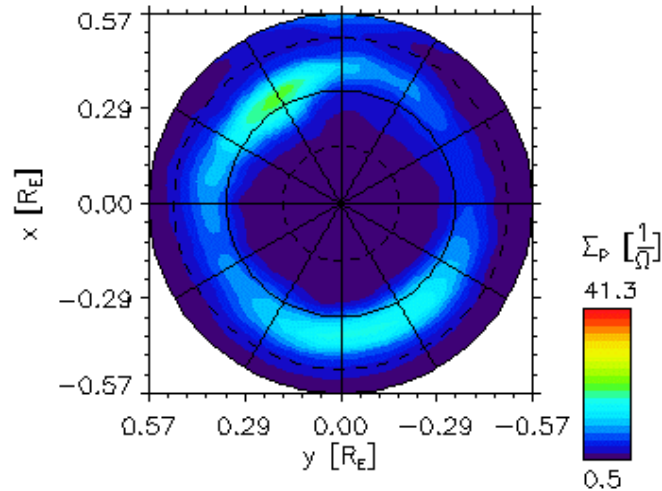
Visualization - Ionosphere

Time = 15:52:00

Northern Hemisphere



Southern Hemisphere



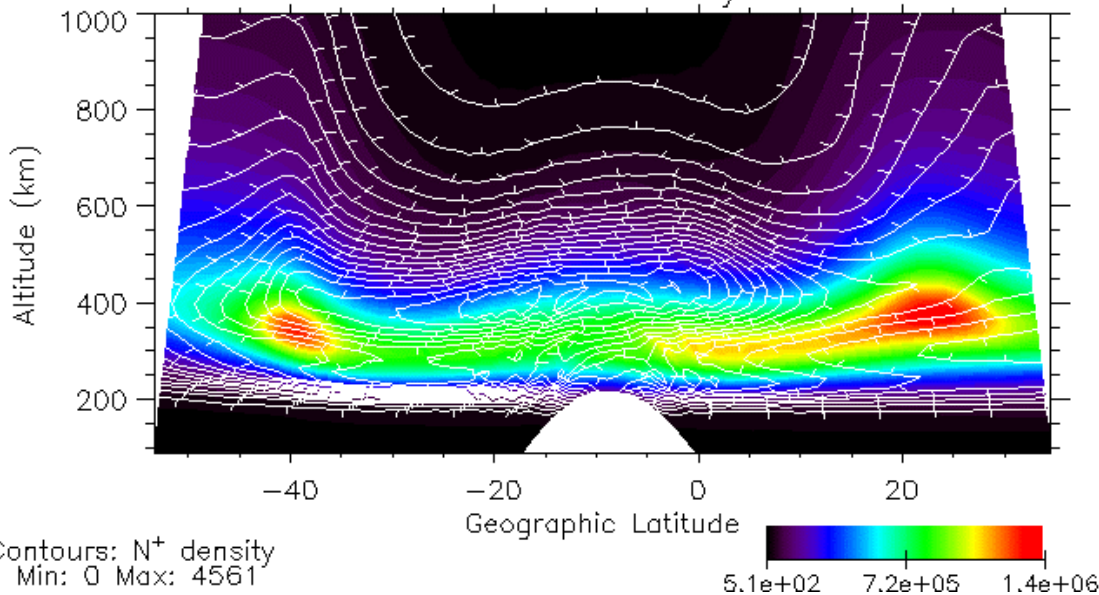
BATS-R-US, UCLA-GGCM:
2 hemispheres

Here: **CTIM** Σ_P , $m\text{lat} > 55$ deg.

IDL programs written from scratch, used existing library of reading routines.

Local time: 06:47

Electron density



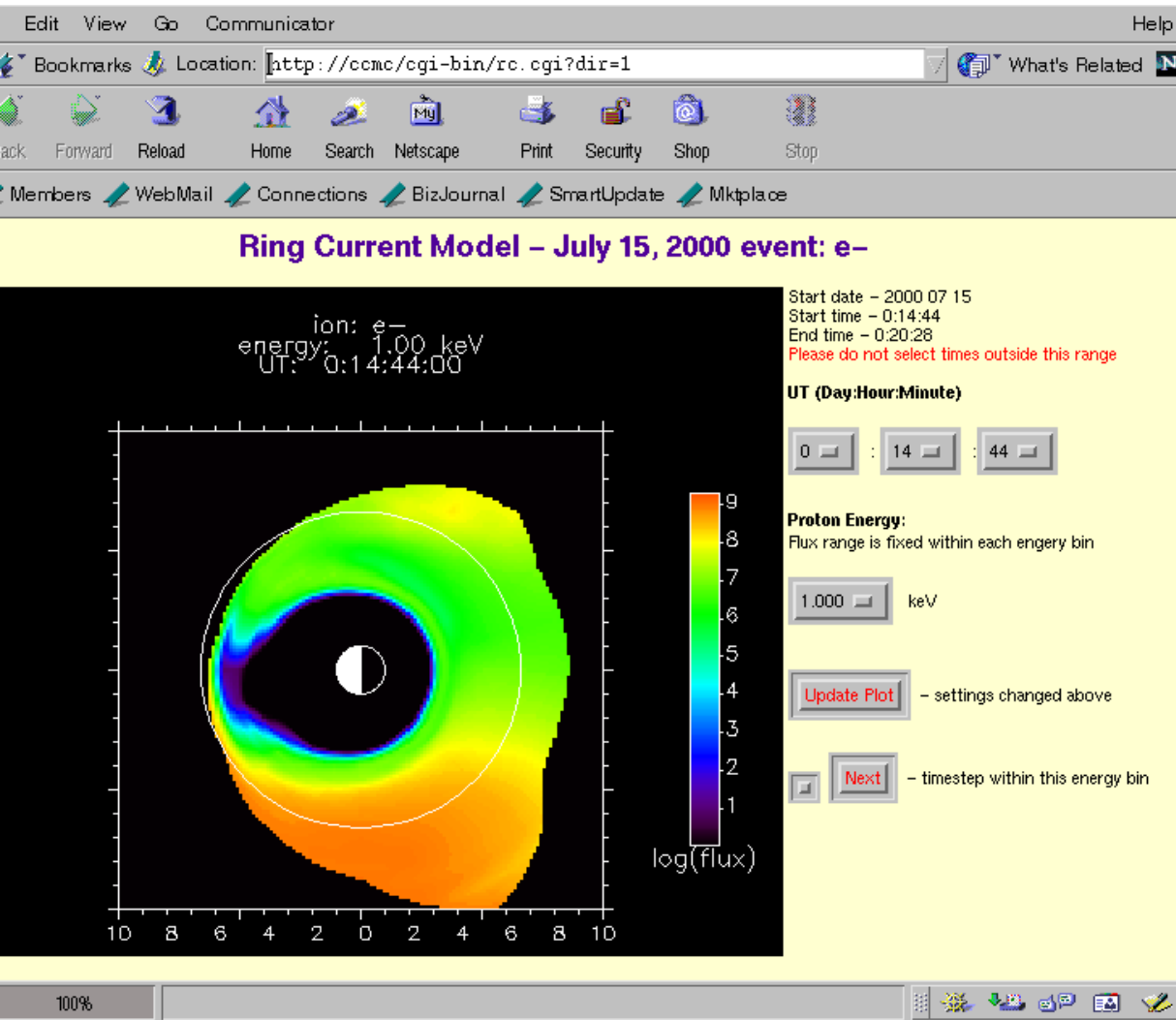
SAMI2:

latitudinal slice

Here: electron, N^+ density

Modified existing IDL scripts written by J. Huba.

Visualization - Ring Current



Ring current:

Shown:

electrons in
equatorial plane

**Magnetosphere in 3D,
next viewgraph:**

Space Weather Explorer,
being developed by P.Reitan,
CCMC using OpenDx.

Shown: log(ρ), fieldlines
near critical points

Space Weather Explorer

