Article Title:

Foreshock Bubbles at Venus: Hybrid Simulations and VEX Observations

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Total Data Size: 882 Mb for 2-D data, 24 MB for videos

Brief Description of Data:

Data from 1 run is included in 2-D version. This data corresponds to the X-Y plane of the simulation box and includes total magnetic field, log(10) of plasma density, log(10) of ionospheric O^+ ions and the X component of solar wind velocity at 560 times during the run. This data is in "Direct Access" (.gda) format (readable by visualization packages such as IDL). The dimensions of the 2-D data sets are 402x302 in X and Y directions and corresponds to 560 times during the run.

Information on Units:

The data are in the following units:

Magnetic field is normalized to the magnetic field strength in the solar wind.

Density is normalized to solar wind density.

Velocity is normalized to the Alfvén velocity in the solar wind.

Generic Code for Reading 2-D Data (e.g. btot.gda):

```
RecordLength (in bytes) = 4 x (size_in_X x size_in_Y)

OPEN (10,file='btot.gda',form='unformatted',access='direct',status= &
        'unknown',recl= RecordLength)
```

Note: 10 is arbitrary I/O unit ID number chosen here for example. This number is used when reading ‘btot.gda’ file as shown below.

```
READ (10,rec=1,560)  ((btot(i,j),i=1, size_in_X),j=1, size_in_Y)
```

Note: Here rec=1,560 since 2-D data is shown at 560 times during the run. Also `size_in_X = 402 size_in_Y = 302.`