

5/23/2017

Voyager 1 & 2 CSV Data File

The purpose of this document is to outline the structure of the information contained within the V1_Data_CSV.csv and V2_Data_CSV.csv file.

This CSV file contains time and trajectory coordinate information for the locations where the Plasma Science (PLS) data was analyzed using VIPER. Also contained in this document are the results of the analysis, which include information about how the data was fit and the resulting flow speeds, temperatures, and densities as determined by VIPER.

Coordinate Information:

For this document, all coordinates are prescribed in the Right Handed System III coordinate frame, hereafter RHSIII, with latitude given in co-latitude. Thus if the latitudinal location of the magnetic equator is 98 degrees, the magnetic equator lies at 8 degrees **below** the RHSIII spin equator. The radial distances are given as absolute distances from Jupiter's center, thus $R = \sqrt{X^2 + Y^2 + Z^2}$.

Column 1-5: Contain time information of when the measurements were taken.

Column 6-8: Spacecraft location information in RHSIII

Column 9: Provides the methods (below) as to how the parameters being fit were handled by VIPER.

1. case 1 (blue) - variation of all parameters (mostly in the inner cold torus);
2. case 2 (red) - constraining the ion abundances of the five main ion species (O^+ , O^{++} , S^+ , S^{++} , S^{+++}) to the standard composition based on Delamere et al. [2005] as listed in Table 1;
3. case 3 (black) - fixed ion composition plus fixed flow speed;
4. case 4 (green) - cold blobs in the plasma sheet where resolved peaks can be fit allowing some variation in composition;
5. case 5 (purple) - interpolation between the composition of the cold torus and the standard composition at 6 RJ from Delamere et al. [2005].

Column 10-12: Plasma flow speed during Voyager flyby

Column 13: Total Charge density of plasma during the flyby

Column 14-32: Density and Temperature results for individual species as fit by VIPER.

Written by:

Kaleb Bodisch

Fran Bagenal

5/23/2017