The electromagnetic comet

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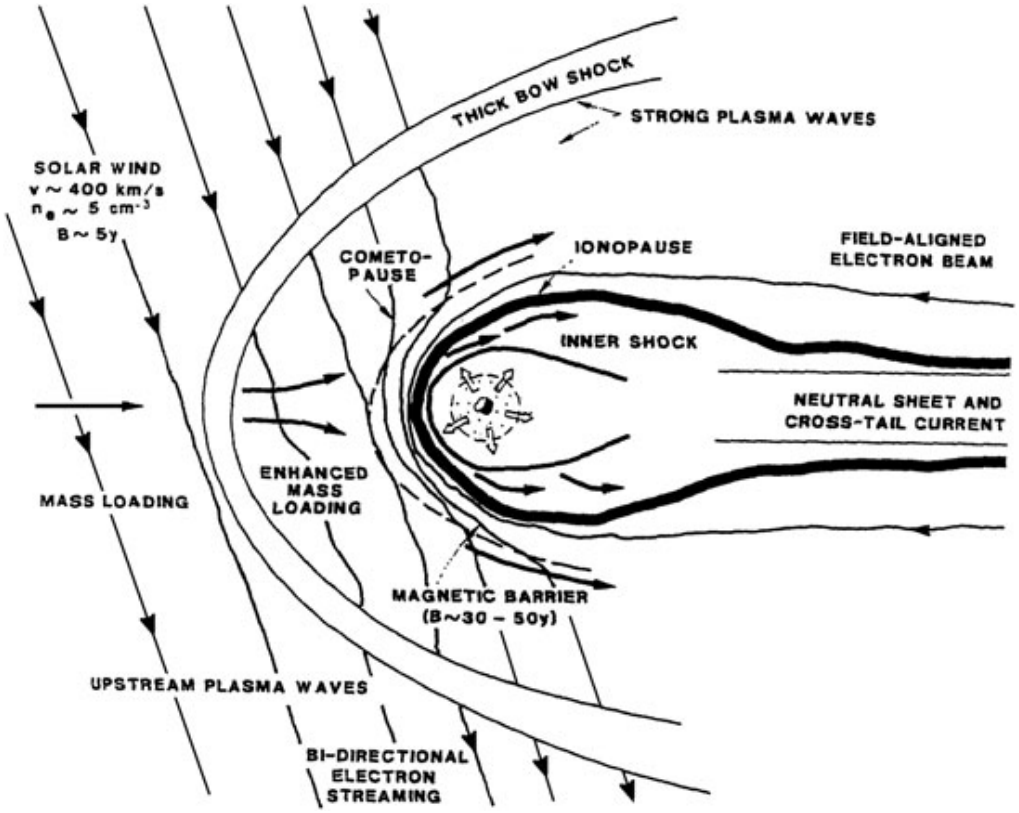
There is more to comets than an outgassing dirty snowball or snowy dirtball; the nucleus and the escaping gas and dust interact with the solar radiation and wind in a complex way. In this presentation we will investigate some of the details of this interaction: what happens to the escaping gas? What different regions are created around the comet's nucleus? How is a cometary tail created and how can it be lost? What will be measured by Rosetta and Philae? How does the cometary coma generate X-rays? Using the magnetic field and plasma data from earlier missions we can already get a picture of what is going on near the comets that have already been visited by earlier spacecraft (1P/Halley, 21P/Giacobini-Zinner and 27P/Grigg-Skjellerup). We will apply the results to make predictions for and comparisons with the data from Rosetta at 67P/Churyumov-Gerasimenko. Pretty pictures and plasma physics, we have it all.



An overview of the various regions around a comet generated by its interaction with the solar wind.