

Transcribed handwritten comments (black ink) from hardcopy versions of various files provided by Dr. Richard Simpson, PDS Radio Science Subnode, and Stanford University.

We have adopted most of the editorial changes found in the scanned document.

General comments.

Ordinarily I would expect there to be a lot of attention given to the methods used to derive the RSS ring profiles from the RSS raw data. Instead the RSS profiles are taken as input "raw" data. The entire focus of the discussion is on Rings Node efforts to make the radial indexing uniform and to update the coordinate reference frames to J2000.

RESPONSE: We have changed our use of "raw data" to "low-level data" and have clarified our meaning in TUTORIAL.TXT and numerous other places. The directories are now named "LOWDATA".

The major issue with this review appears to be one of incorrect expectations about what this volume contains, relative to what the reviewer thinks it ought to contain. We have rewritten the opening of AAREADME.TXT to make this clearer:

The ring profiles contained herein are the end result of extensive processing by the Voyager Radioscience team at Stanford. A phase-locked, continuous-wave signal at two wavelengths (S-band and X-band) was transmitted from the spacecraft as it passed behind the rings, as seen from Earth. On Earth, Deep Space Network (DSN) ground stations received the raw signal. Afterward, extensive processing was required to remove the effects of diffraction through the rings and retrieve a fine-resolution profile of opacity and phase shift. The details of that processing can be found in several publications:

[MAROUFETAL1982] Marouf, E.A., G.L. Tyler, and V.R. Eshleman, Theory of Radio Occultation by Saturn's rings, *Icarus*, 49, 161-193, 1982.

[MAROUFETAL1986] Marouf, E.A., G.L. Tyler, and P.A. Rosen, Profiling Saturn's Rings by Radio Occultation, *Icarus*, 68, 120-166, 1986.

ONLY HIGHLY PROCESSED, DERIVED RING OCCULTATION PROFILES ARE PROVIDED ON THIS VOLUME. The contents are based on a set of highly processed ring profiles obtained from Voyager RSS team members. We have updated the geometry and have developed some tools to enable limited re-processing of the data to different spatial resolutions. Our focus has been on preserving these ring profiles in a form that will make them usable to the widest audience possible. This volume does not contain the raw data or other information a user would need to re-process planetary ring profiles from the raw sources.

Lots of repetition among AAREADME.TXT, DATASET.CAT, and TUTORIAL.TXT – not all consistent, not entirely complete. A single discussion of the data flow and processing steps would be preferred.

RESPONSE: There is always some overlap between the information provided in AAREADME.TXT DATASET.CAT. Given it's purpose, further overlap with the TUTORIAL.TXT file is inevitable. We feel that this redundancy increases the likelihood that a typical user will find the information necessary to understand the origins and effectively use the data contained in this archive. The concern that the documentation is "not necessarily complete" presumably stems from the reviewers concern that we have not documented the processing. As noted above, we have now provided a very high-level overview of that processing, highlighted the relevant citations, and explained why further details are not provided.

Multiple CALIB, GEOMETRY, DOCUMENT directories (including CALIB etc. inside "data" directories) is confusing to new user. Careless use of "data" and "data set" is also a problem.

RESPONSE: As noted above, we have renamed the subdirectories of DOCUMENT. We now simply have a structure with identical subdirectories inside the two data subdirectories, one associated with Saturn and the other with Uranus.

We have corrected all relevant uses of the phrase "data set".

Remnants of UVS/PPS terminology in templates need to be removed. Check uses of "emissivity" & transmissivity".

RESPONSE: We have removed the word "emissivity" and have defined "transmissivity" more explicitly.

AAREADME.TXT

- a. Suggest removing the /SORCDATA subdirectories from under /S\_RINGS and /U\_RINGS and placing them under /EXTRAS.
- b. Recommend moving files from /DOCUMENT/CALIB and /DOCUMENT/GEOMETRY to /CALIB and /GEOMETRY respectively.
- c. Recommend moving sample output files from the /SOFTWARE directory to /CALIB directory
- d. Explain 'EDITDATA' – what was edited and why the files in this directory are suitable for resampling.

RESPONSE: We have elected not perform a major reorganization of the volume. The recommendations a-c are not strictly needed for PDS compliance, were not requested by the other reviewers, and break parallelism with the earlier volumes.

We have added more explanation of the EDITDATA files to AAREADME.TXT and TUTORIAL.TXT.