

Peer Review of PDS VG\_2803 Volume  
Richard G. French  
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## 1. Introduction

I have approached this review as a scientist interested in being able to use and understand the data contained on the VG\_2803 data archive disk, rather than as a PDS expert with an eye to seeing whether every PDS archiving rule has been properly met. I think that Dick Simpson can provide that level of review more effectively than I can. Nevertheless, I will point out places where I think things can be made more clear, and where additional information would be helpful.

I will organize the review directory-by-directory, in the order in which I think an interested scientist would visit them. Then, at the end, I will make some general comments.

## 2. Files and Directories

In the following, I list files that I have actually opened and read in their entirety. An annotation of 'OK' means that I found the contents to be clear and unambiguous. As noted above, I did not check the syntax of every data field.

AAREADME.TXT – This file gives an excellent overview of the volume contents and organization. I have no recommended changes. The directory tree is particularly useful and clear.

ERRATA.TXT – Clear and well-justified changes from strict PDS standards are well-documented here.

VOLDESC.CAT – OK.

### **CATALOG Directory**

CATINFO.TXT – OK – Nice summary of other files in this directory.

DATASET.CAT – OK – Very important documentation of the data on the volume.

DSCOLL.CAT – OK – Provides a good rationale for documenting the Cassini RSS data in a similar format!

MISSION.CAT – OK – Interesting historical information.

PERSON.CAT - OK

REF.CAT – OK – Now I know where Allan deviation was originally defined!

SOFTWARE.CAT - OK

VG1HOST.CAT - OK

VG1SINST.CAT - OK

VG2UINST.CAT - OK

VG2HOST.CAT – OK

## **DOCUMENT Directory**

ATLAS.LBL – I am a bit unclear about what is meant by the remark:

“Charts were reconstructed from the raw 'vector' files given to Mark Showalter by the Stanford team.” – Do you mean that the plots were originally expressed in a plotting format such as mongo or something similar to that? I gather that these are not simply scans of the fan-fold charts produced by Paul Rosen that some of us have. A bit more detail about just how these files were produced would be welcome.

**RESPONSE:** We have added this text into the labels: “The files were structured as pairs of line segment endpoints (x1,y1),(x2,y2), with dash patterns embedded in higher-order bits. The files were exported into very simple Adobe Postscript and then converted to PDF.”

ATLAS.PDF – Works very well, including the links. A monumental effort by someone!

**Thank you!**

ATLNOTES – OK (.LBL and .PDF)

### **CALIB subdirectory**

DOCINFO.TXT – OK

#### **PROGRAMS subdirectory**

DOCINFO.TXT – OK

FITLINES.FOR – Very clear documentation. I did not try to compile it.

PROGRAMS.LBL – OK

Remaining programs look OK

#### **SDATA subdirectory**

DOCINFO.TXT – OK

RS1C1X3 – OK - I plotted the .FIT file without difficulty, in IDL.

Other files look OK

DOCINFO.TXT – OK – good level of detail.

### **GEOMETRY subdirectory**

DOCINFO.TXT – OK

#### **PDN subdirectory**

I read through several program files and they looked well-documented.

#### **PROGRAMS subdirectory**

DOCINFO.TXT – OK

All programs and files here look clear and well-documented.

#### **SDATA subdirectory**

DOCINFO.TXT – OK

All files here look OK.

### **UDATA subdirectory**

DOCINFO.TXT – OK

I plotted up several of these files and they looked OK.

PDSDD.TXT – I skimmed this but did not examine it closely

POLES.TXT – OK – clear description of coordinate transformations

### **/DOCUMENTS/PROGRAMS subdirectory**

There is no DOCINFO.TXT file in this directory – it would have been welcome!

**RESPONSE: Done.**

PROGRAMS.LBL – does not take the place of DOCINFO.TXT

I examined all of the programs (but did not attempt to compile them). They are clearly described.

RS[1234]SDOC.TXT – OK – essential information about data formats and processing.

TUTORIAL.TXT – OK – This is the mother lode of information about the data on this disk. I read it thoroughly and found it very clear.

### **INDEX Directory**

I did not attempt to check these files in detail.

### **S\_RINGS Directory**

DOCINFO.TXT – OK

#### **CALIB subdirectory**

CALINFO.TXT – OK

RS1C1S.TAB,LBL – I used Excel to import and plot this file without problems.

Other files look OK.

DATAINFO.TXT – OK

#### **EASYDATA subdirectory**

DATAINFO.TXT – OK

#### **KMOOO\_2 subdirectory**

RS1P1S07.LBL – OK

RS1P1S07.TAB – I used Excel to plot this, but had trouble plotting more than 32,000 points, so I resorted to IDL. This worked fine. (In practice, I replaced the commas with spaces and copied the file to a new version of the file.)

I assume that all of the other files are similar in structure and format.

**RESPONSE: Yes, they are all in the same format.**

#### **EDITDATA subdirectory**

DATAINFO.TXT – OK

RS1D1[S,X]CI.DAT – binary data – I was able to read and plot these files in IDL on a Mac PowerBook G4 without any difficulty – this is an IEEE-standard machine. I constructed a radial axis and converted from complex amplitude to normalized signal strength.

I assume that the other data files are similar in structure and format.

**RESPONSE:** Yes, they are all in the same format.

**GEOMETRY subdirectory**

GEOMINFO.TXT – OK

I plotted up one of the \*.TAB files and it looked fine.

**RAWDATA subdirectory**

DATAINFO.TXT – OK

I did not attempt to read these data files.

**SORCDATA subdirectory**

DATAINFO.TXT – OK

I did not attempt to read these date files.

**SOFTWARE Directory**

**OAL subdirectory**

AAREADME.TXT – I noticed that ‘Interface’ was spelled ‘nterface in the FILES section under idl/

**RESPONSE:** Fixed.

I did not attempt to compile any code in this section, but I did examine the IDL \*.pro files and concluded that they would require a fair amount of local tuning to get directory names properly set up, to handle MAC OS X properly, etc. However, I don’t think that the PDS Rings Node should attempt to change this, except perhaps to make it clear to the user that these IDL routines are not useful ‘out of the box’ but require tweaking.

**RESPONSE:** We regret that you encountered difficulties building the software. We have added a note to SOFTWARE/OAL/AAREADME.TXT, as follows: “All PDS source code is necessarily provided ‘as is’; we cannot guarantee that it will run on a given platform.”

**FORTTRAN subdirectory** – I did not look at this section.

**IDL subdirectory**

Reference is made to the file ‘IDL.Makefile’ in the README.TXT file, but I did not figure out how to produce this file. I tried to follow the instructions about where to find this information but I was not successful.

**RESPONSE:** The file was renamed “IDLMAKE.MAK” for compliance with PDS file naming standards. This is now noted in SOFTWARE/OAL/IDL/README.TXT.

L3, OAL files – OK

**SOURCE subdirectory**

I would like to see a SRCINFO.TXT file that describes all of the files in this directory.

**RESPONSE:** We have provided this file now, SOFTWARE/OAL/SOURCE/AAREADME.TXT. The name was chosen so that it appears more prominently when one views this directory. We have also augmented the similar file at the next directory level up, SOFTWARE/OAL/AAREADME.TXT, with additional information and expanded build instructions.

The MAKEFILE.1 file does not seem to have the required source files in the directory for it to run properly.

**RESPONSE:** This file is now explained in SOFTWARE/OAL/AAREADME.TXT. It is the original “Makefile” included in the delivery tar file, renamed to “MAKEFILE.1” for PDS compliance. However, the user should work with MAKEFILE.MAK, as discussed in the AAREADME file.

There is a MACOSX.DEF file but I could not find where it was used.

**RESPONSE:** We have added further details in SOFTWARE/OAL/AAREADME.TXT.

I attempted to compile the code in this directory so that I could run the PROFILE set of software, but I did not succeed in figuring out how to compile the code properly on a MAC OS X. Without the oal.a library, the PROFILE programs will not load properly, so I was stymied.

**RESPONSE:** You are correct that one cannot build the tools without oal.a. We have re-tested the build instructions under Mac OS and they do work. The fact that you did not see the purpose of MACOSX.DEF indicates that clearer instructions were needed, and we have updated the AAREADME accordingly.

### **PROFILE subdirectory**

I could not compile and load the programs in this directory, in part (but only in part) because I could not compile the OAL library properly.

**RESPONSE:** We hope that the expanded instructions in SOFTWARE/OAL/AAREADME.TXT will be helpful.

### **SPICE directory**

DATAINFO.TXT – OK

I did not check the contents of these files.

### **URINGS directory**

I scanned through all of the subdirectories to make sure that the nomenclature and syntax were clear, and to confirm that I could tell how the data were arranged. I plotted several of the **EASYDATA** files and they worked fine.

## **3. General Comments**

Overall, I found this volume to be well-organized, clearly documented, and complete. There were several places where a DOCINFO.TXT or DATAINFO.TXT file would have been helpful, as noted above. Given more time and energy, I suspect that I could have solved the compilation programs I had with getting the libraries properly compiled. The same applies to IDL code to access the data. In both cases, clearer instructions would be welcome

