

General comments

I have concentrated on ROSRSI_0001_2004_086_V1.0. Assume that filenames and discussions refer to this volume unless stated otherwise.

The documentation is extensive and useful. Lots of ancillary information and calibration information accompany the data. The data products are appropriate and useful, with a caveat about missing high-order data products (see below). I have many minor comments about formatting and typo errors. My overall impression of this archive is that it is excellent.

INST.CAT describes RSI's science objectives. These will be achieved by the acquisition and analysis of higher-order data products, eg Gravity field of comet in spherical harmonic representation, eg Number density of neutral gas/plasma around comet. There does not appear to be a commitment or plan to archive these higher-order data products. Archiving the higher-order data products would increase the value of RSI's results to the scientific community, thereby increasing the return on the investment provided by RSI's funding agencies.

I have never tried to convert raw RS data into scientifically useful quantities, so I am not well-qualified to determine whether this archive contains sufficient information to do so. My best judgement is that it does contain sufficient information. The level 2 frequency and differential Doppler data are products that can be used by data users to determine scientifically interesting properties without the user needing to be an expert on the RSI instrument and its operation.

These archives are huge. Their size may make them difficult to use, although computers will have improved by the time Rosetta reaches its comet. It might be helpful to users if users can download DOCUMENT, CATALOG, and L2 data without having to download CALIB, L1A, L1B, and EXTRAS as well. This is an issue for the PSA, not RSI.

AAREADME.TXT says "Each disc in the volume set contains data from one day of the mission phase" and "Data from Experiments on 2004/087". This suggests that all the day 87 data will be in ROSRSI_0002_2004_087_V1.0, when day 87 data is actually in both ROSRSI_0001_2004_086_V1.0 and ROSRSI_0002_2004_087_V1.0. I can understand that the most convenient time to split data into volumes is not always at UTC midnight. Perhaps AAREADME.TXT can be clearer and say something like "Each disc in the volume set contains data from approximately 24 hours of the mission phase, not always coinciding with a complete UTC calendar day."

Experiment	RSI	RID NR	RS-001	Originator Code	PW
RID Title	AAREADME.TXT typos				
Dataset	RO-X-RSI-1/2/3-CVP1-0001	RID Classification	EDITORIAL		
Discrepancy	<ol style="list-style-type: none"> 1. 2. Several instances of sentences starting on new lines, but not starting a new paragraph. This makes the structure of the text confusing. Eg, first paragraph in section VOLUME SET INFORMATION. 3. 4. "volume nay contain" - typo 5. 6. "in case of ESA IFMS data the" - this sentence is garbled. 7. 8. "ephemrises" - typo 9. 10. "are Not included" - why is Not capitalized? Period missing at end of this sentence. 11. 12. The first sentence in the acknowledgements does not have a period at its end. The second sentence (about the PI and team leader) is confusing. 13. 14. "(RSI Data Manager).Although" - missing space 15. 16. "are his alone." - this refers to Paetzold and Simpson, two people. 17. 18. Neither Paetzold nor Haeusler have phone numbers/email addresses listed. 19. 				

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| | <ol style="list-style-type: none">20. Why do MGS and MOI appear in the list of acronyms?21. NASA is defined, but ESA is not.22.23. TNF is used in the text, but TDF is given in the list of acronyms.24.25. RSR is used in the text, but is not in the list of acronyms. |
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Experiment	RSI	RID NR	RS-002	Originator Code	PW
RID Title	ERRATA.TXT typos				
Dataset	RO-X-RSI-1/2/3-CVP1-0001	RID Classification	EDITORIAL		
Discrepancy	<p>26. NOTE = "Introduction to this archive volume."</p> <p>27. Is this the best description of the errata file? This NOTE is the same as for the AAREADME file.</p> <p>28.</p> <p>29. The line breaks are confusing in this file and many other files too.</p> <p>30.</p> <p>31. AGC is not defined in the acronym list in AAREADME.TXT</p>				

Experiment	RSI	RID NR	RS-003	Originator Code	PW
RID Title	BROWSE improvements				
Dataset	RO-X-RSI-1/2/3-CVP1-0001	RID Classification	MINOR		
Discrepancy	<p>BROWINFO doesn't tell me what is plotted versus what. The summary in the .LBL files could be repeated here.</p> <p>32. The filenames appear to contain information, such as year, day of year, time, s/x-band. BROWINFO.TXT should explain how to read these filenames, such as that given in DATASET.CAT.</p> <p>33.</p> <p>34. I'm looking at R32ICL1L02_B1S_040862257_00.JPG. It would be helpful if the LBL file or BROWINFO.TXT says that AGC [dBm] corresponds to "SIGNAL LEVEL" in the LBL file accompanying the level 2 data. Also that calibration [Hz] corresponds to "CORRECTION OF EARTH ATMOSPHERE PROPAGATION" and that residuals [Hz] corresponds to "RESIDUAL CALIBRATED S-BAND FREQUENCY SHIFT". Otherwise, the user has to guess what "calibration [Hz]" refers to.</p>				

Experiment	RSI	RID NR	RS-004	Originator Code	PW
RID Title	BROWSE typos				
Dataset	RO-X-RSI-1/2/3-CVP1-0001	RID Classification	EDITORIAL		
Discrepancy	<p>35. "plots ♦f calibrated" - typo in BROWINFO.TXT</p> <p>36.</p> <p>37. R32ICL1L02_B1S_040862257_00.JPG</p> <p>38. Heading on the first two plots includes "komplett", a German word.</p> <p>39.</p> <p>40. Compare R32ICL1L02_B1S_040862257_00.JPG and R32ICL1L02_B1S_040870259_00.JPG. The x-axis labels (times) are not in the same format in these two images. One is "03/27 23:00", the other is "03:00:00".</p> <p>41.</p> <p>42. R32ICL1L02_B1S_040870259_00.JPG</p> <p>43. Why does the format of the x-axis labels change for the last set of plots in this file? "03:00:00" to "03:18:00" is followed by "20:00" to "36:00", which is followed by "38:00" to "56:00".</p> <p>44.</p> <p>45. OK, I think I've worked it out. The time labels only state the hour if the hour changes across the plot. Same for the day. Is that right?</p> <p>46.</p> <p>47. R32ICL1L02_B1S_040862257_00.LBL</p> <p>48. "the titel on top" - typo</p> <p>49.</p> <p>50.</p> <p>51. Why doesn't R32ICL1L02_B2S_040870605_00.JPG contain an "AGC [dBm]"</p>				

	<p>plot? The text in the LBL file is the same for all images, so it doesn't explain the absence of this plot.</p> <p>52.</p> <p>53. What does the text in the top right corner of each plot mean? Eg. "data_raw_S.dat using 1:3", where "raw" is sometimes "filtered" and "1:3" can be some other ratio. In R32ICL1L02_B1S_040862257_00.JPG, the complete residual plot is "raw", but the three subdivided plots are "filtered". Does this mean that the subdivided plots contain different information (filtered) than the complete (raw) plot?</p>
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Experiment	RSI	RID NR	RS-005	Originator Code	PW
RID Title	CALIB typos				
Dataset	RO-X-RSI-1/2/3-CVP1-0001	RID Classification	EDITORIAL		
Discrepancy	<p>54. CALINFO.TXT</p> <p>55. "the calibrations files" - typo, calibration</p> <p>56.</p> <p>57. This file suggests that CLOSED_LOOP/DSN does not contain any subdirectories, but OPEN_LOOP/DSN does contain subdirectories. Is this correct? I do not have any open loop files or DSN files in my review volumes.</p> <p>58.</p> <p>59. CALIB/CLOSED_LOOP/IFMS/DCL/R32ICL1L1A_C1S_040862002_00.LBL</p> <p>60. "known spurious frequency" - typo, spurious</p> <p>61.</p> <p>62. CALIB/CLOSED_LOOP/IFMS/DCL/R32ICL1L1A_C1S_040862002_00.RAW</p> <p>63. Format of this file doesn't look PDS/PSA-compliant.</p> <p>64.</p> <p>65. CALIB/CLOSED_LOOP/IFMS/DCL/R32ICL1L1B_C1S_040862002_00.LBL</p> <p>66. NASA spacecraft refer to the main spacecraft clock as SCLK. Is this what "INTERVAL COUNT" is? Or is "INTERVAL COUNT" part of the RSI instrument?</p> <p>67.</p> <p>68. "In additon two" - typo</p> <p>69.</p> <p>70. "Acquisiton Process" - typo</p> <p>71.</p>				

72. "tosubsequent" - typo
- 73.
74. "17.5E6/2EXP30" - why not use "2E30"?
- 75.
76. "17.4E6/2EXP32" - why not use "2E32"?
- 77.
78. "Rgd,Rcd,Scd" - entry 193 of R32ICL1L1B_C1S_040862002_00.CFG is "RGD", not "Rgd".
- 79.
80. "RgSource.For" - missing space
- 81.
82. The LBL files in CALIB/CLOSED_LOOP/IFMS/DCL/ (and probably others in higher directories) talk about the level 1A and level 1B folders. The CALIB information is not separated into level 1A and 1B folders.
- 83.
84. CALIB/CLOSED_LOOP/IFMS/MET/
- 85.
86. R32ICL1L1A_MET_040862003_00.LBL
87. "in the in the" - typo
- 88.
89. "CCYYMMDD.HHMMSS.sss ." - unnecessary space before period.
- 90.
91. "temperature in °C" - I thought that LBL files should contain only very simple ASCII characters. Is this degree symbol compliant? It appears OK in my text editor, but not in my xterm window.
- 92.
93. CALIB/CLOSED_LOOP/IFMS/MET/R32ICL1L1B_MET_040862003_00.LBL
94. "UTC.THE FORMAT" - missing space

Experiment	RSI	RID NR	RS-006	Originator Code	PW
RID Title	CATALOG typos				
Dataset	RO-X-RSI-1/2/3-CVP1-0001	RID Classification	EDITORIAL		
Discrepancy	<p>95. DATASET.CAT</p> <p>96. TBD is listed for ESA ground station IDs.</p> <p>97.</p> <p>98. Definition of sss data type for IFMS data files level 1A & 1B is followed by definition for IFMS data files level 1b. Why define 1A and 1B, then define 1B again? There is some inconsistency in the use of "1b" and "1B".</p> <p>99.</p> <p>100. "meteorological" - typo</p> <p>101.</p> <p>102. "Asteroid flyby (TBC)." - Has TBC been confirmed yet?</p> <p>103.</p> <p>104. "CLOSED_ LOOP" - space before LOOP is unnecessary.</p> <p>105.</p> <p>106. There are more files listed for DSN_DOC than are actually present in DOCUMENT/DSN_DOC/</p> <p>107.</p> <p>108. Will AGC1 always refer to D2 or will this mislabelling be corrected for future volumes?</p> <p>109.</p> <p>110. "ancillary, information" - unnecessary comma</p> <p>111.</p> <p>112. "D2X uncalibrated Doppler 2 x-Band" - lower case X</p>				

- 113.
114. INST.CAT
115. "onbord" - typo
- 116.
117. "Rosetta S/C" - there is no "(" preceding this ")"
- 118.
119. "mass of Churyumov-" - two spaces after "of"
- 120.
121. "Eros,demonstrate" - missing space
- 122.
123. "can then be safely" - two spaces after "then"
- 124.
125. "(C20 and C22)" - too many spaces
- 126.
127. "outgasing" - or is it "outgassing"? I'm not sure.
- 128.
129. "addition th exact" - typo
- 130.
131. "measurement (TBD)" - Is this still TBD?
- 132.
133. "conjunction season" - typo
- 134.
135. "seen from Earth" - two spaces after "from"
- 136.
137. "10E-13 at 10-1000 seconds" - Is this 1E-13 or 10E-13? 10E-13 = 1E-12. Two spaces between "13" and "at"
- 138.
139. "radio link can" - two spaces after "link"

- 140.
141. "taken into account: (TBD)" - Is this still TBD?
- 142.
143. "experiments were there" - typo, change "were" to "where"
- 144.
145. "of a 19" crate" - Why is this length stated in inches?
- 146.
147. "DSCC. The backup CMC" - three spaces before "the"
- 148.
149. "SIM" - Acronym is listed, but not defined.
- 150.
151. "SNT System Nolise Temperature" - typo, noise
- 152.
153. INSTHOST.CAT
- 154.
155. "number of equipment's" - unnecessary apostrophe
- 156.
157. "Churyumow" - typo?
- 158.
159. "faces(+/-Y)" - missing space
- 160.
161. "±180°" - Are the plus/minus and degree symbols compliant with the PSA standards for permitted symbols in text files?
- 162.
163. "2×10e-13" - does this mean 2E-13 or 2 x 10 x 1E-13 = 2E-12?
- 164.
165. "use it's own" - typo, bad apostrophe
- 166.

167. "50^m Kapton" - what does "50^m" mean?
- 168.
169. "REFERENCES TBD" - TBD
- 170.
171. "PSS-02-10 ####TBD####" - TBD
- 172.
173. I can't find RO-DSS-TN-1155 in REF.CAT
- 174.
175. "TINOX" - is this acronym defined anywhere?
- 176.
177. "The Lander mass is around 100 kg." - Is this known accurately?
- 178.
179. "the 10years" - typo, missing space
- 180.
181. "Subsystem Definiton" - typo, spelling
- 182.
183. "space, during cruise parallel" - unusual line break after "during"
- 184.
185. "+Y-axis completes" - typo, two spaces before completes
- 186.
187. "no power on the Lander Primary Bus" - typo, no period at end of sentence.
- 188.
189. "only dissipate, if the Primary" - typo, comma is not needed
- 190.
191. "REFERENCES TBD BY SONC" - TBD
- 192.
193. "splitted in 4-1" - does this mean "split into"?

- 194.
195. "#####TBD#####" - TBD
- 196.
197. "67P/Churyumow" - is the last letter "w" or "v"?
- 198.
199. "INCLUDE DEFINITION TBD" - TBD
- 200.
201. "The Earth is between spacecraft and Sun" - Are you sure this causes a "degradation of the command link"?
- 202.
203. "Manouver" - typo, spelling. Try manoeuvre (UK) or maneuver (US)
- 204.
205. "[TBD] Interference Scenario Report" - TBD
- 206.
207. The Deep Impact mission is discussed. Several papers on this have been published by the Rosetta teams. They could be cited here.
- 208.
209. "For more information refer to the following reports: [TBD]" - TBD
- 210.
211. "splitted in 4-1 and 4-2" - "split into 4-1 and 4.2" sounds better
- 212.
213. "Instrument References: [TBD]" - Have any papers on the instruments been published yet?
- 214.
215. "several ESA spacecrafts" - "spacecraft" is plural and singular, it doesn't need an "s" on the end.
- 216.
217. "RLGS Rosetta Lander Ground Segment" - The definition of "RLGS" starts one place to the left of all the others.
- 218.

- 219.
220. REF.CAT
- 221.
222. In LAMYETAL1998, Mike A'Hearn's name appears as A?Hearn
- 223.
224. IN RSIUSERMANUAL2004, "(RSI)Flight" needs a space
- 225.
226. PAETZOLDETAL1991B and PAETZOLDETAL1993 both have an unnecessary space in the REFERENCE_KEY_ID, eg " PAETZOLDETAL1991B". Also see Tyler references. This happens in many REFERENCE_DESC entries as well.
- 227.
228. There is a blank line in the title of PAETZOLDETAL1993
- 229.
230. Some names are given as "K. Wirth" and some as "J.Zender". Should there be a space between the first initial and the last name or not?
- 231.
232. In RL-PL-DLR-97002, the positions of the commas between names should be improved - "S. Ulamec,D. Moura"
- 233.
234. The references to ESA Rosetta documents, such as RO-EST-AO-0001, are formatted differently from the others.

Experiment	RSI	RID NR	RS-007	Originator Code	PW
RID Title	Is format of RAW file in DATA/ compliant?				
Dataset	RO-X-RSI-1/2/3-CVP1-0001	RID Classification	MINOR		
Discrepancy	235. LEVEL1A/CLOSED_LOOP/IFMS/AG1/R32ICL1L1A_AG1_040862257_00.RAW				
	236. Is this format PSA-compliant?				
	237.				

Experiment	RSI	RID NR	RS-008	Originator Code	PW
RID Title	DATA typos				
Dataset	RO-X-RSI-1/2/3-CVP1-0001		RID Classification	EDITORIAL	
Discrepancy	<p>238. DATA/LEVEL1A/CLOSED_LOOP/IFMS/AG2/R32ICL1L1A_AG2_040862257_00.LBL</p> <p>239. "Rright Hand" - typo</p> <p>240.</p> <p>241. LEVEL1B/CLOSED_LOOP/IFMS/AG1/R32ICL1L1B_AG1_040862257_00.LBL</p> <p>242. "BE RHC.)VALUES SHOULD" - missing space</p> <p>243.</p> <p>244. LEVEL1B/CLOSED_LOOP/IFMS/AG1/R32ICL1L1B_AG1_040862257_00.CFG</p> <p>245. Is this format PSA-compliant?</p> <p>246.</p> <p>247. LEVEL1B/CLOSED_LOOP/IFMS/AG1/R32ICL1L1B_AG1_040862257_00.LBL</p> <p>248. "Acquisiton" - typo</p>				

Experiment	RSI	RID NR	RS-009	Originator Code	PW
RID Title	DOCUMENT typos				
Dataset	RO-X-RSI-1/2/3-CVP1-0001	RID Classification	EDITORIAL		
Discrepancy	<p>249. DSN_DOC/</p> <p>250.</p> <p>251. Why has an ASCII file (DSN_MEDIA_CAL_TRK_2_23) been converted into a PDF file? The ASCII file would be more stable for long-term access. Also DSN_WEA_FORMAT_TRK_2_24.PDF.</p> <p>252.</p> <p>253. DSN_WEA_FORMAT_TRK_2_24.PDF seems MGS-specific</p> <p>254.</p> <p>255. ESA_DOC/</p> <p>256.</p> <p>257. ROS-ESC-ID-5003_FDSICD.LBL</p> <p>258. Formatting of DESCRIPTION is unusual.</p> <p>259.</p> <p>260. ROS-ESC-IF-5003_APPENDIX_C.PDF</p> <p>261. Does Axel Hagermann still work at Cologne?</p> <p>262.</p> <p>263. RSI_DOC/</p> <p>264.</p> <p>265. M32UNBWL1B_RCL_030801_00.LBL</p> <p>266. DESCRIPTION = "TRANSPONDER GRUPPENLAUFZEIT" - German word</p>				

- 267.
268. M32UNBWL1B_RCL_030801_00.PDF is in German
- 269.
270. ROS_OPS_LOGBOOK_04.PDF relates to MEX, according to top of each page
- 271.
272. ROS-RSI-IGM-DS-3118.LBL has unusual formatting for DESCRIPTION
273. Also 3119
- 274.
275. ROS-RSI-IGM-IS-3079.ASC looks like it has been automatically produced from another file. It would be improved if someone edited it manually to clean up lots of minor formatting problems, eg adding blank lines before sections like 3.2.2. Lots of TBDs in 6.1.1 could be replaced, also in the RSI observation time line table.
- 276.
277. ROS-RSI-IGM-IS-3087.ASC
278. "UniBw Universit?t der" - typo for the umlaut.
279. "of ESA?s mission" - typo for apostrophe
280. Again, this file would benefit from manual editing.
- 281.
282. ROS-RSI-IGM-LI-3116.PDF
283. Axel Hagermann listed as experiment manager
- 284.
- 285.
- 286.

Experiment	RSI	RID NR	RS-010	Originator Code	PW
RID Title	EXTRAS typos				
Dataset	RO-X-RSI-1/2/3-CVP1-0001	RID Classification	EDITORIAL		
Discrepancy	<p>287. EXTRINFO.TXT</p> <p>288. "ftp://solarsystem.estec.esa.nl" - does this still exist? My command line says:</p> <p>289. > ftp solarsystem.estec.esa.nl</p> <p>290. ftp: solarsystem.estec.esa.nl: Name or service not known</p> <p>291.</p> <p>292. "Modified Spcie" - typo</p> <p>293.</p> <p>294. ANCILLARY/ESOC/OASW/DATA/</p> <p>295.</p> <p>296. What file/document should I read to understand what is in the AUX files? I didn't see anything in DATASET.CAT, EXTRINFO.TXT, or AAREADME.TXT. Perhaps I need to look at the DOCUMENTs more closely.</p> <p>297.</p> <p>298. ANCILLARY/SPICE</p> <p>299. EXTRINFO.TXT promises an AAREADME.TXT file in this folder, but there isn't one.</p> <p>300.</p> <p>301. ANCILLARY/SPICE/PCK/AAREADME.TXT</p> <p>302. "ratios to of" - typo</p> <p>303. "after privat" - typo</p> <p>304.</p>				

305. ANCILLARY/UNI_BW/R74UNBWL02_PTW_040862200_00.TAB has no accompanying LBL file

306.

Experiment	RSI	RID NR	RS-011	Originator Code	PW
RID Title	INDEX typos				
Dataset	RO-X-RSI-1/2/3-CVP1-0001	RID Classification	EDITORIAL		
Discrepancy	<p>307. BROWSE_INDEX.LBL</p> <p>308. The formatting of the text in DESCRIPTION is unusual.</p> <p>309.</p> <p>310. Why does "//COLUMN_NUMBER" have "/" at the start of it? Also in BROWSE_INDEX.LBL</p> <p>311.</p> <p>312. INDEX.LBL and BROWSE_INDEX.LBL also have unusual formatting in DESCRIPTION</p> <p>313.</p>				

Experiment	RSI	RID NR	RS-012	Originator Code	PW
RID Title	Poor line breaks				
Dataset	RO-X-RSI-1/2/3-CVP1-0001	RID Classification	MAJOR		
Discrepancy	There are many instances of unusual line breaks. Eg, first paragraph in section VOLUME SET INFORMATION of AAREADME.TXT. Eg, in ERRATA.TXT.				

Experiment	RSI	RID NR	RS-013	Originator Code	PW
RID Title	What is difference between L1A and L1B data files?				
Dataset	RO-X-RSI-1/2/3-CVP1-0001		RID Classification	MAJOR	
Discrepancy	<p>314. The contents of</p> <p>315. DATA/LEVEL1A/CLOSED_LOOP/IFMS/DP2/R32ICL1L1A_D2S_040862257_00.RAW and</p> <p>316. DATA/LEVEL1B/CLOSED_LOOP/IFMS/DP2/R32ICL1L1B_D2S_040862257_00.TAB seem to be the same. If only the formatting is different, it seems unnecessary to archive two copies of the same data.</p>				

Experiment	RSI	RID NR	RS-014	Originator Code	PW
RID Title	Consistency in which data are archived				
Dataset	RO-X-RSI-1/2/3-CVP1-0001	RID Classification	MAJOR		
Discrepancy	<p>ROSRSI_0001_2004_086_V1.0. BROWSE/ and DATA/LEVEL02/ contain X-band data, but DATA/LEVEL1A/, DATA/LEVEL1B/, and CALIB/ do not contain X-band data. Where are the level 1A and 1B X-band data? For ROSRSI_0002_2004_087_V1.0/, L1A, L1B, and L02 have both S and X-band data. In contrast, ROSRSI_0003_2004_088_V1.0/ has level 2 S-band data, but not level 1A or 1B. I am confused.</p>				

Experiment	RSI	RID NR	RS-015	Originator Code	PW
RID Title	INSTRUMENT_MODE				
Dataset	RO-X-RSI-1/2/3-CVP1-0001	RID Classification	MINOR		
Discrepancy	R32ICL1L02_D1S_040862257_00.LBL has entries for INSTRUMENT_MODE_ID and INSTRUMENT_MODE_DESC. R32ICL1L02_D1S_040882304_00.LBL has not. R32ICL1L02_D1X_040900254_00.LBL does not have them either.				

Experiment	RSI	RID NR	RS-000	Originator Code	PW
RID Title					
Dataset	RO-X-RSI-1/2/3-CVP1-0001	RID Classification	EDITORIAL		
Discrepancy					