

ADDENDA TO INTERNAL REPORT #68

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|-------------------------|--------------------------------------|
| D. Baker Memo 8/1 /77 | - IMP Sectoring |
| T. Garrard " 9/23/77 | - " " |
| D. Baker Memo 8/18/77 | - Magnetometer |
| R. Lepping Memo 12/8/77 | - Errors in IMP-7 Spin Axis Attitude |
| R. Mewaldt Memo 2/15/78 | - IMP-8 Sectored Rate Data |

W. Stone
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L. V. JONE

DEC 22 1977
11/17/77

December 8, 1977

TO: Dr. Joe King
IMP-7 Project Scientist
Code 692

Bill Valente
NSSDC Data Request Coordinator
Code 601.4

FROM: Dr. R. P. Lepping
IMP-7 Magnetic Field Experiment Co-Investigator
Code 695

SUBJECT: Recently Discovered Errors in IMP-7 Spin Axis Attitude
Information Covering Two 4-Day Periods on Experimenter Tape

W. Mish and I recently discovered that during the lifetime of the IMP-7 magnetic field experiment (launch to April 4, 1973) two periods of about 4-days each had incorrect S/C spin axis attitude information on our experimenter tapes (5 tapes affected in all). During these periods the right ascension (R.A.) and declination (Decl.) of the S/C spin axis were incorrectly given as R.A. = 0.0° and Decl. = 0.0° . These periods are:

First

Start: February 9, 1973, 1745 U.T. Orbit 11
End: February 13, 1973, 1801 U.T.

What the S/C attitude should have been (estimated):

$$\begin{aligned} \text{R.A.} &= 88.15^\circ \pm 0.25^\circ \\ \text{Decl.} &= -66.4^\circ \pm 0.2^\circ \end{aligned}$$

Exp. tapes affected: FP 3919 and FP 3929 (This was all IMF data.)

Second

Start: March 1, 1973, 2244 U.T. Orbit 13
End: March 5, 1973, 2346 U.T.

What the S/C attitude should have been (estimated):

$$\begin{aligned} \text{R.A.} &= 88.3^\circ \pm 0.5^\circ \\ \text{Decl.} &= -66.5^\circ \pm 0.1^\circ \end{aligned}$$

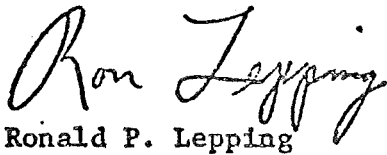
Exp. tapes affected: FP 3941, FP 3942, and FP 3943. (This was either geomagnetic tail or sheath data, but no IMF.)

The estimated R.A. and Decl. were based on averages of the values immediately pre- and post-error period in both cases.

For those who use such direction information among the IMP-7 experimenters, this should have an adverse impact directly on their own data. Concerning our field data all 15.36 sec. aves. (summary tape output), longer averages, and any 40 msec. data for these days will be incorrect, although the field magnitude will be correct. Our 1.28 sec. aves. in payload coordinates, of course, are unaffected, since they do not depend on S/C attitude.

Within approximately a month we hope to properly reprocess these periods in phase II. In the meantime I would appreciate NSSDC sending a notice to the effect that our angle description of our field (15.36 sec averages) requires correction for those eight days to whomever has received such data.

The IMP-7 project scientist might wish to notify all S/C P. I.'s of the problem, since the impact of the incorrect attitude will affect most IMP-7 experimental data. To my knowledge these periods have not been extensively studied and have not appeared in any way in the scientific literature.



Ronald P. Lepping

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TO SRL Group DATE 2/15/78
FROM R. A. Mewaldt *RAM* EXTENSION 2612 MAIL CODE 220-47
SUBJECT IMP-8 Sectored Rate Data

Following the shadow of 1/10/78, the IMP-8 spin rate dropped to 21,237 rpm. At spin rates below 21.6 rpm EIS sectored rate data will be compromised (including to a lesser extent spin averages of sectored rates) since 7 complete spins per 20.48 sec are not always possible. On 2/10/78 IMP-8 was spun up to 22.014 rpm, thereby removing this problem, for the time being. Refer to TWX's of 1/13/78 and 2/14/78 for more information.

RAM/v

Distribution:

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