PIONEER VENUS

GLOBAL GRAVITY MODEL

78-051A-21C

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THIS DATA SET CONSITS OF TWO 3.5 INCH FLOPPY DISKS, WRITTEN ON A DOS MACHIEN IN ASCII FORMAT. DUPLICATE DISKS WERE MADE AND PUT IN THE BACK-UP STORAGE AREA.

KF#	FILES
KF000077	1
KF000078	1

B42905-000R

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Telex # 921428

6 April 1993

Dr. Edwin Bell
NSSDC
NASA/Goddard Space Flight Center
MS 633.9
Greenbelt, MD 20771

Ref: Phone conversation of 31 March 1993.

Dear Ed:

Enclosed is a copy of our paper on the gravity of Venus. (Reasenberg and Goldberg, JGR 97(E9), 14,681-14,690, 25 September 1992) The digital maps of gravity and smoothed-distorted topography, corresponding to Plate 1, are potentially of interest to other investigators. For this reason, we indicated in the paper that a copy of these digital maps would be offered to the NSSDC.

Enclosed are two 3.5 inch floppy disks in DOS format. Each contains one file, either topography or gravity. The dataset names are VGRAV.SAO and VTOPO.SAO. The formats are the same for the two files, and the data are in ASCII. Each file starts with a header:

line one: initial latitude (-30), step size (.5), number of steps (181).

line two: initial longitude (0), step size (.5), number of steps (720).

line three: blank

These lines may be read using (FORTRAN) format 2F10.3,I5. There next follows a raster scan of the map, which can be read using format (72(10F8.0/)/). Reads using this format would need to be repeated 181 times to bring in all latitudes.

The data are in the units used for the original analysis: 10^{-9} planet masses per deg^2. The map in our paper is in units of kilometers of material of half the mean density of Venus. To convert the data on the disks to these units, divide by 6.01.

I have recently been asked by Dr. Peter Cattermole of the University of Sheffield to provide a high-quality copy of the pair of maps for inclusion in Venus - The New Geology to be published by University College London Press. I have agreed to do this. I plan to ask that a notice be included indicating that the digital map is available from the NSSDC. Please advise if this is not appropriate.

As we discussed, I also have 40 to 50 tapes of the PVO Doppler tracking data and the orbit estimates made by the Navigation Team. The latter would be essential to the efficient use of the former, and are in a few notebooks. The person who knows the most about the datasets is Zachary Goldberg. It would probably be useful to get his help in sorting out the PVO data.

Thank you for your help in making our maps available to our colleagues. If I can be of any assistance if this matter, please let me know.

Kindest regards,

Robert D. Reasenberg
617-495-7108 (Voice)
617-495-7109 (FAX)

enc.

c: R.W. Babcock
Z.M. Goldberg

Y8-051A-21C

-30.000 0.500 181
0.000 0.500 720

0.377	0.373	0.369	0.365	0.365	0.361	0.361	0.357	0.353	0.349
0.349	0.341	0.337	0.333	0.329	0.329	0.333	0.341	0.349	0.361
0.373	0.381	0.393	0.401	0.413	0.421	0.433	0.445	0.457	0.453
0.453	0.457	0.461	0.465	0.469	0.473	0.477	0.481	0.485	0.489
0.497	0.501	0.505	0.509	0.513	0.517	0.521	0.525	0.533	0.533
0.537	0.541	0.545	0.545	0.549	0.549	0.553	0.553	0.557	0.557
0.561	0.561	0.565	0.569	0.573	0.573	0.577	0.577	0.581	0.581
0.581	0.594	0.610	0.622	0.638	0.674	0.714	0.754	0.798	0.838
0.878	0.922	0.966	1.007	1.051	1.071	1.091	1.107	1.123	1.139
1.155	1.171	1.191	1.207	1.223	1.235	1.247	1.227	1.207	1.147
1.087	1.023	0.962	0.902	0.842	0.778	0.718	0.654	0.594	0.533
0.473	0.409	0.349	0.289	0.229	0.164	0.104	0.056	0.008	-0.040
-0.092	-0.140	-0.192	-0.241	-0.293	-0.341	-0.393	-0.441	-0.489	-0.537
-0.589	-0.638	-0.690	-0.738	-0.790	-0.838	-0.890	-0.910	-0.930	-0.950
-0.970	-0.986	-1.007	-1.027	-1.047	-1.067	-1.087	-1.103	-1.123	-1.143
-1.163	-1.183	-1.203	-1.219	-1.239	-1.247	-1.259	-1.235	-1.215	-1.187
-1.159	-1.143	-1.131	-1.131	-1.131	-1.147	-1.163	-1.195	-1.231	-1.263
-1.299	-1.331	-1.367	-1.400	-1.436	-1.468	-1.504	-1.536	-1.572	-1.580
-1.588	-1.540	-1.492	-1.424	-1.355	-1.287	-1.223	-1.155	-1.087	-1.019
-0.950	-0.882	-0.818	-0.750	-0.682	-0.614	-0.545	-0.477	-0.413	-0.361
-0.309	-0.281	-0.257	-0.233	-0.209	-0.180	-0.156	-0.128	-0.104	-0.080
-0.056	-0.028	-0.004	0.020	0.048	0.072	0.096	0.120	0.148	0.168
0.192	0.180	0.172	0.164	0.156	0.148	0.140	0.132	0.124	0.116
0.108	0.096	0.088	0.080	0.072	0.064	0.056	0.048	0.040	0.084
0.128	0.221	0.317	0.401	0.489	0.565	0.646	0.714	0.782	0.798
0.818	0.790	0.762	0.734	0.710	0.682	0.654	0.626	0.598	0.569
0.545	0.517	0.489	0.465	0.441	0.437	0.433	0.429	0.425	0.421
0.417	0.413	0.409	0.405	0.401	0.397	0.393	0.389	0.385	0.381
0.377	0.373	0.369	0.353	0.337	0.317	0.297	0.277	0.257	0.237
0.217	0.196	0.176	0.156	0.140	0.120	0.100	0.080	0.060	0.040
0.020	0.000	-0.020	-0.016	-0.016	0.016	0.048	0.080	0.112	0.144
0.176	0.209	0.241	0.273	0.305	0.337	0.373	0.405	0.437	0.469
0.501	0.529	0.561	0.553	0.545	0.493	0.441	0.345	0.249	0.108
-0.032	-0.205	-0.377	-0.453	-0.533	-0.610	-0.686	-0.762	-0.842	-0.918
-0.999	-1.075	-1.151	-1.227	-1.307	-1.420	-1.532	-1.568	-1.608	-1.616
-1.624	-1.632	-1.644	-1.652	-1.660	-1.668	-1.676	-1.684	-1.692	-1.700
-1.708	-1.716	-1.724	-1.732	-1.740	-1.736	-1.736	-1.712	-1.692	-1.668
-1.648	-1.628	-1.608	-1.584	-1.564	-1.544	-1.524	-1.500	-1.480	-1.456
-1.436	-1.416	-1.396	-1.371	-1.351	-1.327	-1.303	-1.227	-1.151	-1.071
-0.995	-0.914	-0.838	-0.758	-0.682	-0.602	-0.521	-0.441	-0.365	-0.285
-0.209	-0.128	-0.052	0.024	0.104	0.144	0.184	0.164	0.148	0.076
0.008	-0.088	-0.188	-0.317	-0.445	-0.501	-0.557	-0.589	-0.626	-0.662	-0.345	-0.301