

2022-11-08 Update

Zain Kamal

(1) Correlations for Magnetized Craters

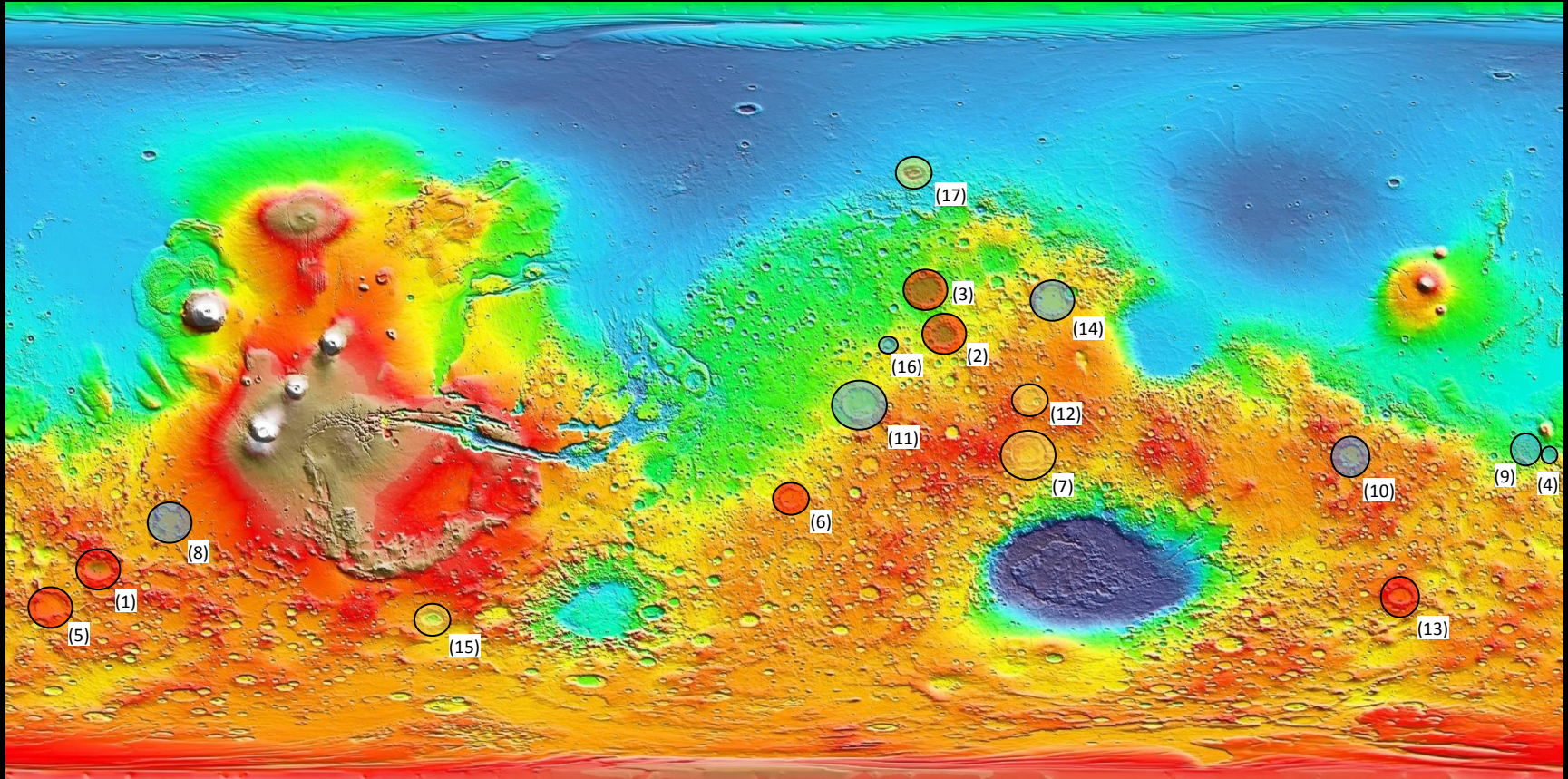
Preface: “mag_rating”

- 3 — Clear/significant demagnetization
- 0 — Neutral/ambiguous
- 3 — Clear/significant remagnetization

Set 1: Craters with well-defined ages (n=17)

A	B	E	F	H	I	J	K	L
ind	name	lon	lat	diam (km)	age (Ga)	error (Ga)	mag_rating	notes
1	Newton	-158.07	-40.44	312.43	4.11	0.05	3	confident
2	Tikhonravov	35.95	13.28	343.77	4.1	0.03	2	not sure, but lillis says likely partial remag
3	Cassini	32.11	23.36	408.31	4.03	0.01	1	luju marked this as remag?
4	Gusev	175.53	-14.51	158.15	4.02	0.02	-1	
5	Newcomb	1.06	-24.24	256.38	4	0.05	1	luju marked this as remag?
6	Copernicus	-168.93	-48.86	302.02	4	0.05	2	
7	Huygens	55.58	-13.89	467.41	3.98	0.02	0	not sure
8	Koval'sky	-141.44	-29.56	285.15	3.96	0.01	-3	
9	Herschel	129.90	-14.48	297.94	3.95	0.01	-2	
10	de Vaucouleurs	171.09	-13.25	311.82	3.95	0.01	-2	double check this
11	Schroeter	55.99	-1.90	291.62	3.92	0.01	-2	
12	Schiaparelli	16.80	-2.51	445.84	3.92	0.05	0	luju marked this as remag?
13	Kepler	141.17	-46.75	222.36	3.92	0.02	1	luju marked this as remag?
14	Antoniadi	60.83	21.39	400.94	3.79	0.01	-2	
15	Lowell	-81.39	-51.96	199.09	3.71	0.01	0	heavily demag region
16	Henry	23.45	10.79	167.58	3.6	0.03	-3	
17	Lyot	29.32	50.47	220.31	3.4	0.05	0	unsure, look at lower altitude

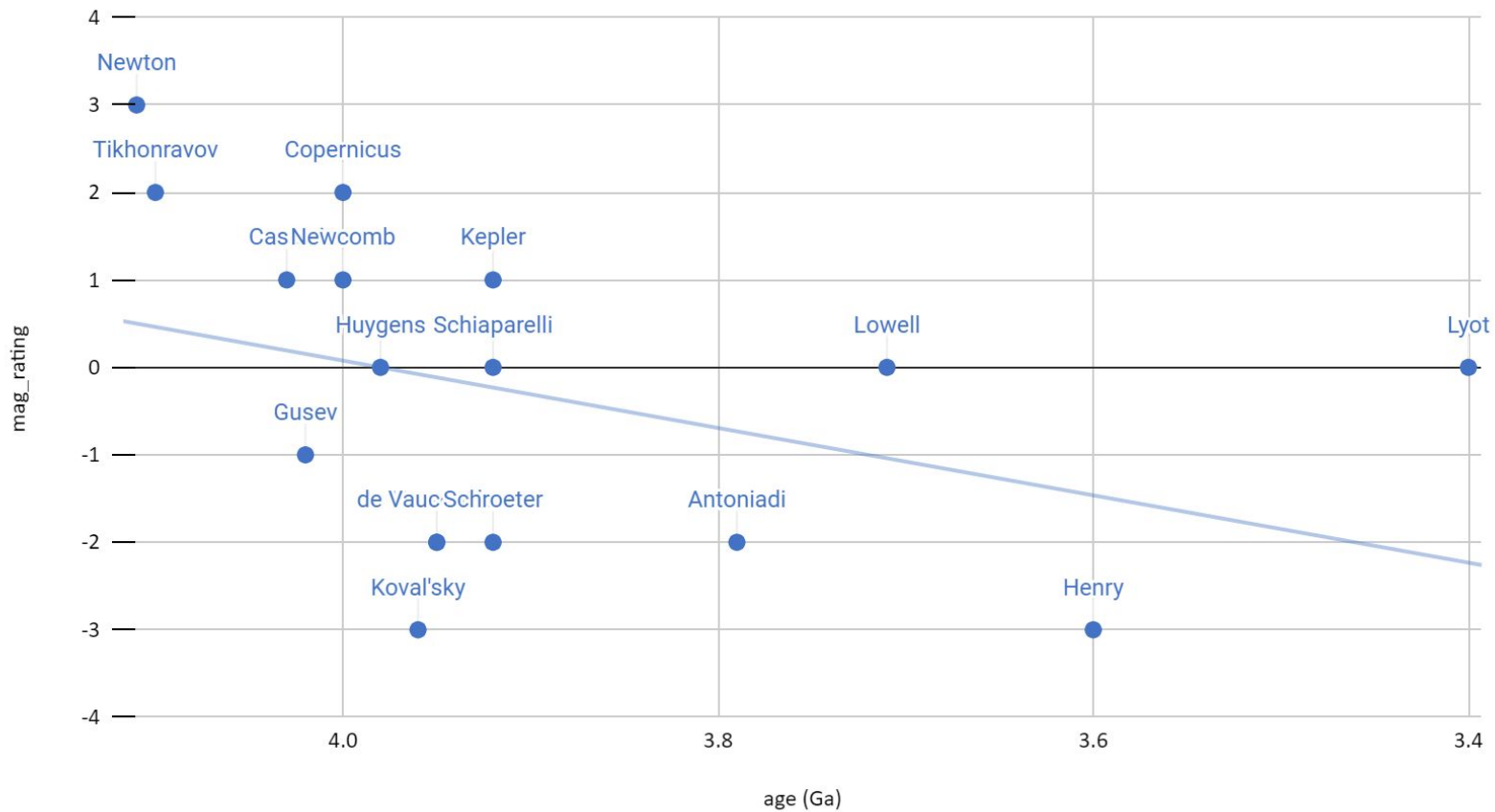
Global Positions of All Craters (17) in our Study



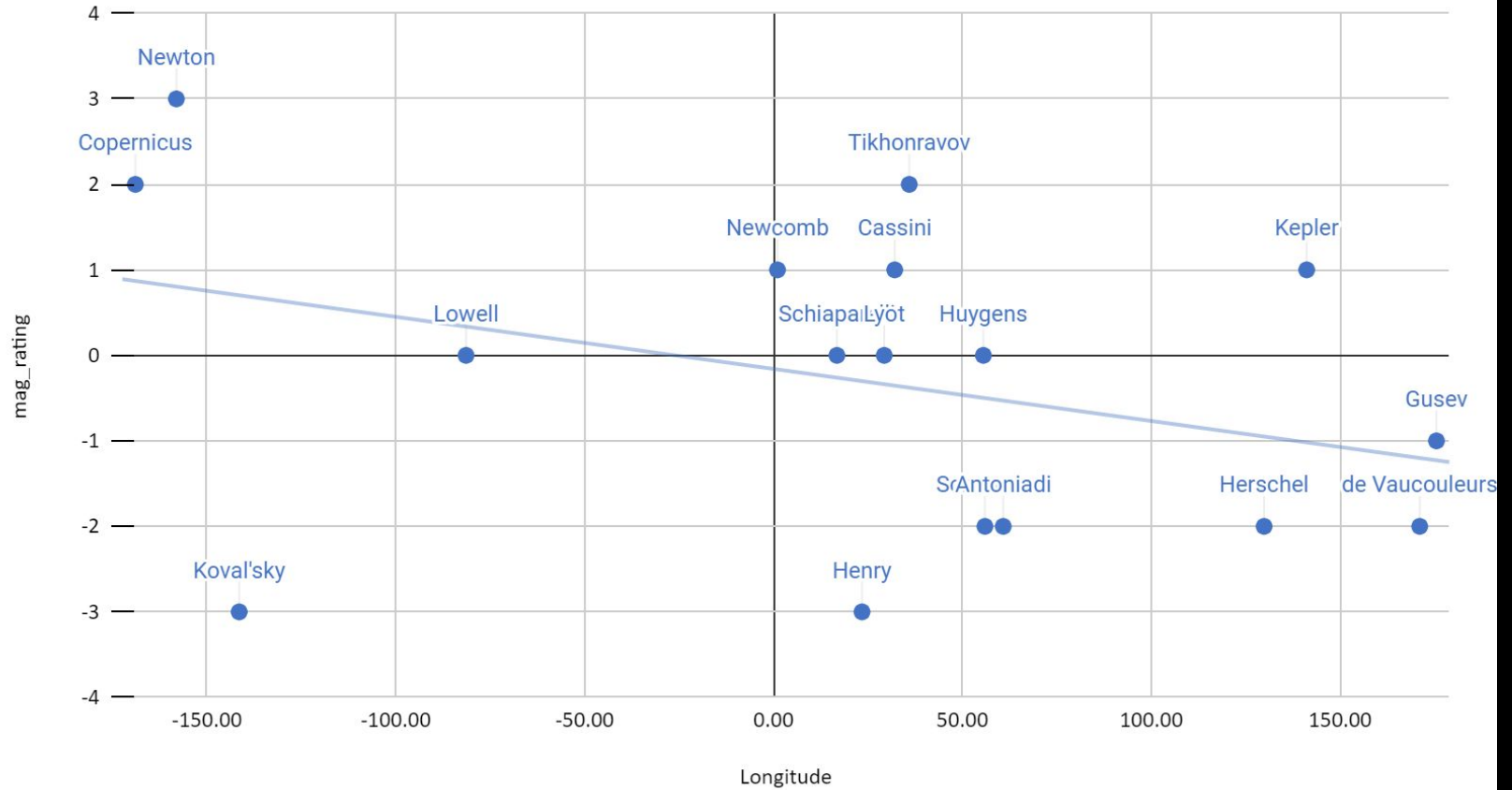
Set 1: Craters with well-defined ages (n=17)

1. Crater magnetization vs. Age
2. Crater magnetization vs. Longitude
3. Crater magnetization vs. Latitude

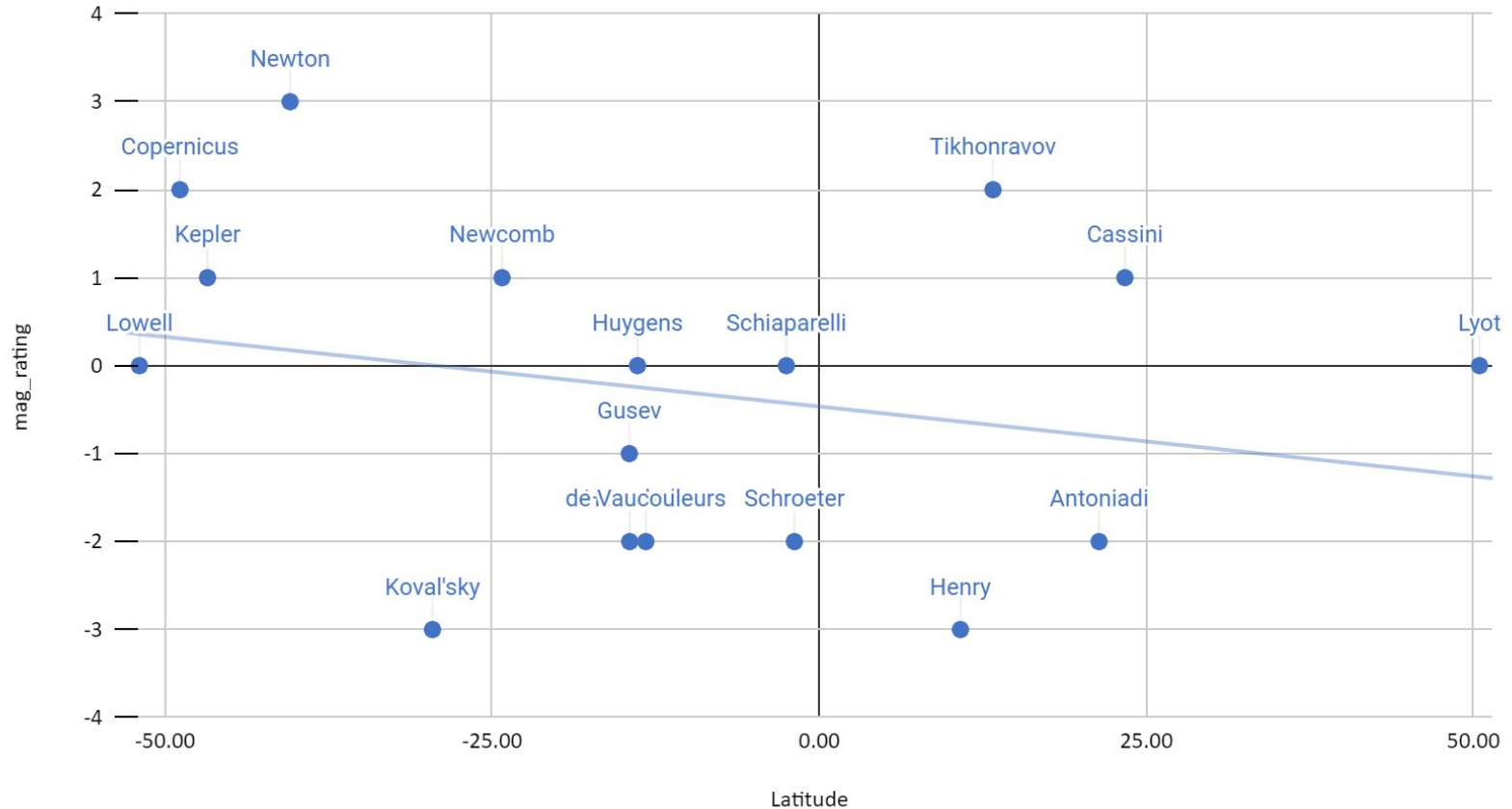
Crater Magnetization vs. Age



Crater Magnetization vs. Longitude



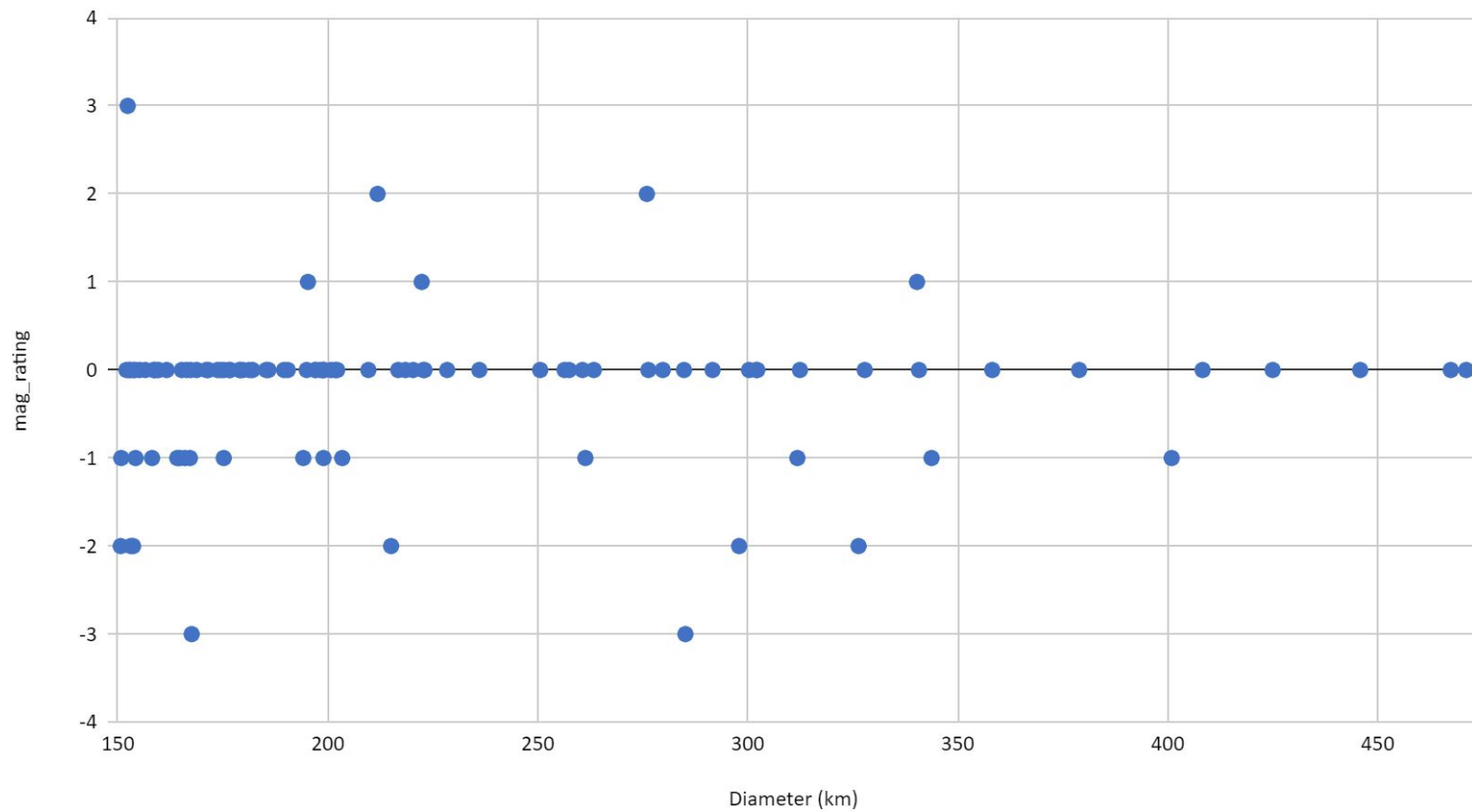
Crater Magnetization vs. Latitude



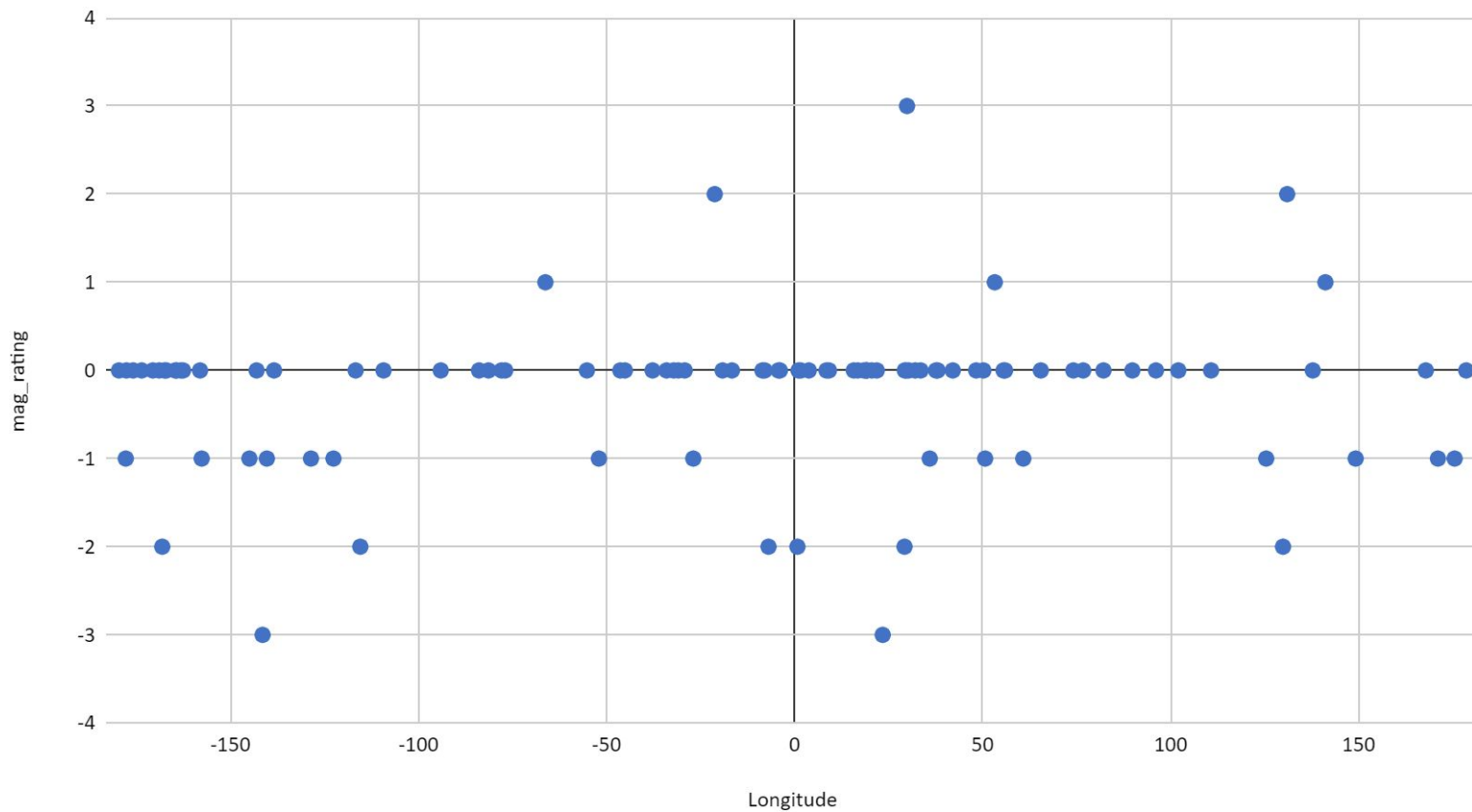
Set 2: Craters with diameter $\geq 150\text{km}$ (n=101)

A	B	E	F	H	I	J	K	L
ind	name	lon	lat	diam (km)	age (Ga)	error (Ga)	mag_rating	notes
1	Newton	-158.07	-40.44	312.43	4.11	0.05	3	confident
2	Tikhonravov	35.95	13.28	343.77	4.1	0.03	2	not sure, but lillis says likely partial remag
3	Cassini	32.11	23.36	408.31	4.03	0.01	1	luju marked this as remag?
4	Gusev	175.53	-14.51	158.15	4.02	0.02	-1	
5	Newcomb	1.06	-24.24	256.38	4	0.05	1	luju marked this as remag?
6	Copernicus	-168.93	-48.86	302.02	4	0.05	2	
7	Huygens	55.58	-13.89	467.41	3.98	0.02	0	not sure
8	Koval'sky	-141.44	-29.56	285.15	3.96	0.01	-3	
9	Herschel	129.90	-14.48	297.94	3.95	0.01	-2	
10	de Vaucouleurs	171.09	-13.25	311.82	3.95	0.01	-2	double check this
11	Schroeter	55.99	-1.90	291.62	3.92	0.01	-2	
12	Schiaparelli	16.80	-2.51	445.84	3.92	0.05	0	luju marked this as remag?
13	Kepler	141.17	-46.75	222.36	3.92	0.02	1	luju marked this as remag?
14	Antoniadi	60.83	21.39	400.94	3.79	0.01	-2	
15	Lowell	-81.39	-51.96	199.09	3.71	0.01	0	heavily demag region
16	Henry	23.45	10.79	167.58	3.6	0.03	-3	
17	Lyot	29.32	50.47	220.31	3.4	0.05	0	unsure, look at lower altitude

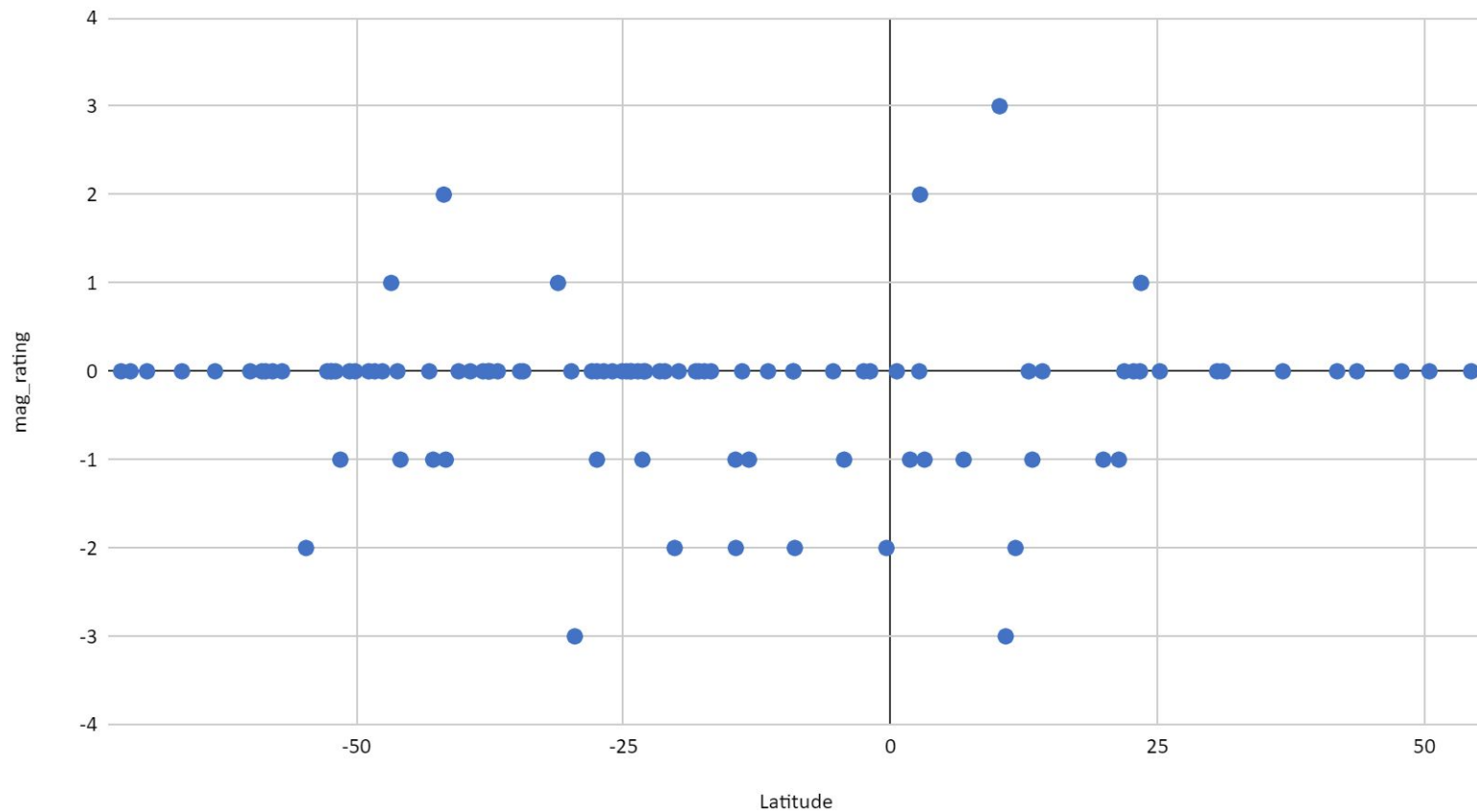
Crater Magnetization vs. Diameter



Crater Magnetization vs. Longitude

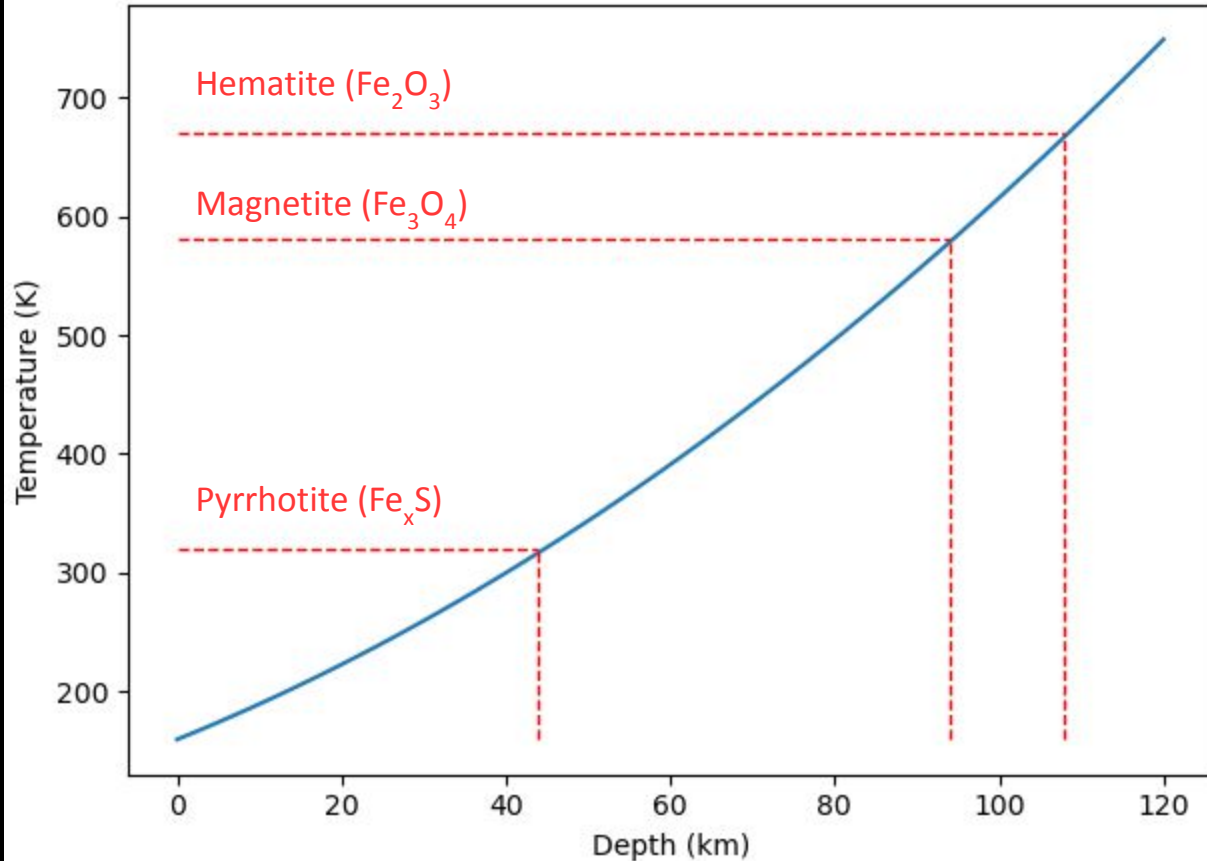


Crater Magnetization vs. Latitude



(2) Curie Depth

Curie Depths at Henry Crater due to Radiogenic HPEs



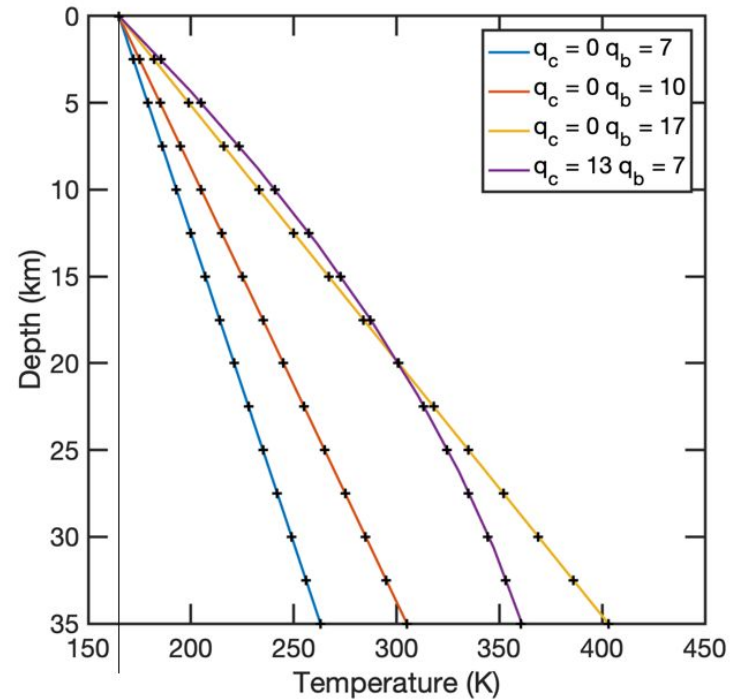
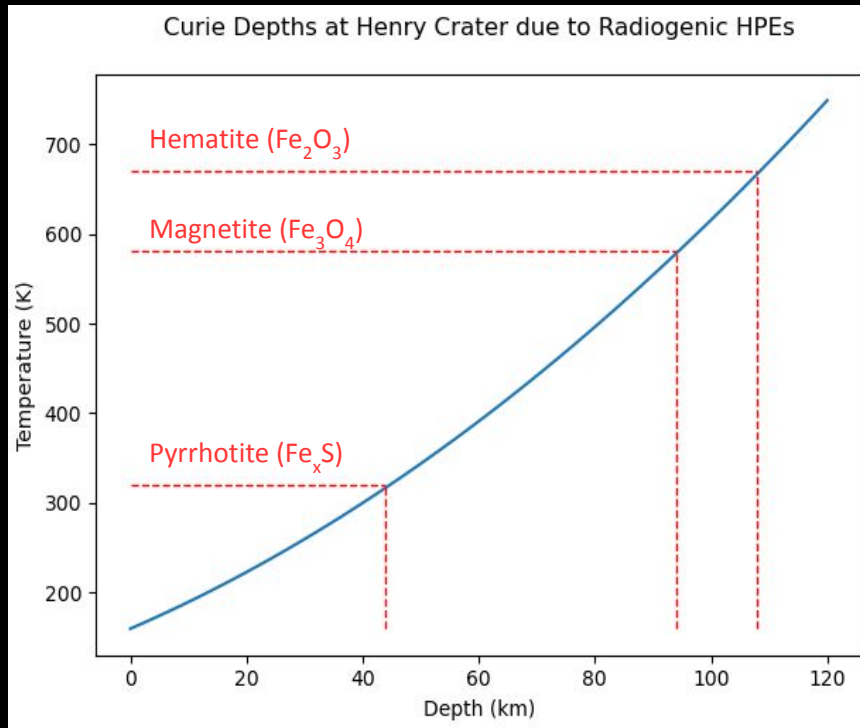


Fig S2. Comparison of the steady-state thermal simulation between the output from the finite element routine (in color) and the analytical solution given in Text S3 (black '+' signs).