

***RESULTS OF MAGNETIC OBSERVATIONS
IN NORTH CHINA**

JULY 4th to SEPTEMBER 6th, 1932

F. C. BROWN AND C. T. KWEL, Observers

Received March 31, 1933

TABLE I

General Average Results for 1932*

Station	Longitude	Latitude	Dip	Declination	Hor. Force in C.G.S. Unit
Changte A, Honan	114 22.5'E	36 05.9'N	52 34.7'N	03 29.6'W	.31224
Changte B, Chengchow	114 21.1 „	36 05.9 „	52 32.8 „	03 32.7 „	.31247
A, Honan Chengchow	113 42.6 „	34 45.2 „	50 42.8 „	03 02.5 „	.32105
B,	113 42.6 „	34 45.7 „	50 49.3 „	03 03.3 „	.32103
Kalgan A,	114 51 „	40 51.6 „	58 41.0 „	03 44.3 „	.28140
Kalgan B,	114 47 „	40 49.1 „	58 47.4 „	04 15.4 „	.27994
Peiping A,	116 24.5 „	39 56.8 „	57 23.2 „	04 33.3 „	.28852
„ B	116 23 „	39 52.5 „	57 13.6 „	04 43.0 „	.28888
„ C	116 20.4 „	40 00.6 „	57 17.8 „	04 52.9 „	.28987

*These results are published with the kind permission of the Acting Director of the Department of Terrestrial Magnetism of the Carnegie Institution of Washington and of the Director of the National Research Institute of Physics, Academia Sinica. They are tentative and are subject to future revision or correction.

Station	Longitude	Latitude	Dip	Declination	Hor. Force in C.G.S. Unit
Shihchia- chuang B	114 31	38 04.6	55 12.6	03 42.1	.30050
„ C	114 31	38 04.6	55 15.5	03 47.0	.30028
Shenchow A,					
Honan	110 11.2	34 48.3	50 55.7	02 30.8	.32191
Shenchow B,	110 11.2	34 48.3	50 59.8	02 33.2	.32224
Sian A,	108 56.2	34 16.3	50 29.2	01 42.2	.32328
„ B,	108 58.8	34 16.4	50 32.1	01 51.5	.32355
Taiyuan	112 37.7	37 52.1	55 11.2	03 18.0	.30149
Tienchen nr Kalgan	114 01	40 26.2	58 10.6	—————	.28442
Tinghsien,	114 58.3	38 31.6	55 49.2	03 59.4	.29741
Hopei					

In the following tables, when there are several stations which are situated in the same locality, only one is selected and that is usually the earliest station or one which has been occupied more than once.

TABLE II.

Dip and Latitude

Station	Latitude	Dip (1932)	Dip (old values)	Av. Change per annum
Sian A	34 16.3'N	50 29.2'N	50 26.6'N ('09)	0.11'
Chengchow A	34 45.2 „	50 42.8 „	50 42.8 „ ('22)	———
Shenchow A	34 48.3 „	50 55.7 „	50 53.0 „ ('09)	0.12
Changte A	36 05.9 „	52 34.7 „	52 32.1 „ ('07)	0.10
Shihchia- chuang B	38 04.6 „	55 12.6 „	—————	
Tinghsien	38 31.6 „	55 49.2 „	—————	
Peiping A	39 56.8 „	57 23.2 „	57 15.4 „ ('07)	0.31
„ „	„ „	57 23.2 „	57 22.4 „ ('09)	0.03
„ „	„ „	„ „	57 18.5 „ ('22)	0.47
Tienchen	40 26.2 „	58 10.6 „	58 02.1 „ ('16)	0.53
Kalgan A	40 51.6 „	58 41.0 „	58 33.9 „ ('15)	0.42
„ „	„ „	„ „	58 33.7 „ ('22)	0.73

Remarks on Table II:

- (1)—Without any exception, the angle of dip increases with latitude.
- (2)—In all cases but one, the angle of dip show an annual increase (average) since the last observation.
- (3)—The mean change per annum is 0.28 0.24'. As no attempt has been made to correct for diurnal and seasonal variations, this value should not be given too much weight.

TABLE III.

Horizontal Force and Latitude

Station	Latitude	Hor. Force in C.G.S. Units		Av. change per annum in gammas
		Value (1932)	(old Value)	
Sian A	34 16.3'N	.32328	.23226 ('09)	0.1
Chengchow A	34 45.2 "	.32105	.31936 ('22)	16.9
Shenchow A	34 48.3 "	.32191	.32168 ('09)	1.0
Changte A	36 05.9 "	.31224	.31221 ('07)	0.1
Taiyuan	37 52.1 "	.30149	.30120 ('07)	1.2
Shihchia- Chuang B	38 04.6 "	.30050	—————	
Tinghsien	38 31.6 "	.29741	—————	
Peiping A	39 56.8 "	.28852	.28991 ('07)	—5.6
"	" "	"	.28928 ('09)	—3.3
"	" "	"	.28792 ('22)	6.0
Tienchen	40 26.2 "	.28442	.28473 ('16)	—1.9
Kalgan A	40 51.6 "	.28140	.28180 ('15)	—2.4
" "	" "	.28140	.28110 ('22)	3.0

Remarks on Table III:

- (1)—It can be seen that as latitude increases, the horizontal force decreases, except in the case of the relative positions of Chengchow A and Shenchow A, whose longitudes differ by three and half degrees.
- (2)—The annual changes are small and fluctuate in both directions.

TABLE IV.

Declination and Longitude

Station	Longitude	Declination 1932	Declination (old values)	Ave Change per annum
Sian A	108 56.2'E	01 42.2'W	00 38.2'W ('09)	2.8'
Shenchow A	110 11.2 „	02 30.8 „	01 29.4 „ ('09)	2.8
Taiyuan	112 37.7 „	03 18.0 „	02 09.8 „ ('07)	2.5
Chengchow A	113 42.6 „	03 02.5 „	02 47.2 „ ('22)	1.5
Changte A	114 22.5 „	03 29.6 „	02 23.8 „ ('07)	2.6
Shihchia- chuang B	114 31 „	03 42.1 „	—————	
Kalgan A	114 51 „	03 44.3 „	03 06.8 „ ('15)	2.2
Peiping A				
Tinghsien	114 58.3 „	03 59.4 „	—————	
Peiping A	116 24.5 „	04 33.3 „	03 38.4 „ ('07)	2.2
„ „	„ „	„ „	03 30.1 „ ('09)	2.7
„ „	„ „	„ „	04 13.2 „ ('02)	2.0

Remarks on Table IV:

- (1)—The north end of the magnet without any exception points west of north in all of the stations occupied.
- (2)—The angle of declination increases with longitude, except for the relative positions of Taiyuan and Chengchow A, whose latitudes differ from each other by more than three degrees.
- (3)—There is a definite annual average increase in the westward increase during the last two and half decades, the mean value of which is 2.4 0.1'.
- (4)—The above table suggests that the line of zero declination would pass through a point between two and half to five degrees directly west of Sian.