

UNITED STATES DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY

Principal Facts for Gravity Stations
in the Whetstone Roadless Area, Arizona

by

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Open-File Report 82-738

1982

This report is preliminary and has not been reviewed for conformity with U.S. Geological Survey editorial standards.

Use of trade names is for descriptive purposes only and does not imply endorsement by the USGS.

STUDIES RELATED TO WILDERNESS

The Wilderness Act (Public Law 88-577, September 3, 1964) and related acts require the U.S. Geological Survey and the U.S. Bureau of Mines to survey certain areas on Federal lands to determine their mineral resource potential. Results must be made available to the public and be submitted to the President and the Congress. This report presents the results of a geophysical survey of the Whetstone Roadless Area in the National Forest, Cochise and Pima Counties, Arizona. The Whetstone Roadless Area was classified as a proposed wilderness during the Second Roadless Area Review and Evaluation (RARE II) by the U.S. Forest Service, January 1979.

Contents

	Page
Introduction.....	1
Data Collection.....	1
Elevation Control.....	1
Data Reduction.....	2
References.....	3
List of Figures	
Fig. 1: Location Map of Survey Area.....	4
Appendices	
A: Elevation Accuracies.....	5
B: Willcox Base Description.....	6
C: Benson P.O. Base Description.....	7
D: Pinelodge Base Description.....	8
E: Sahara Base Description.....	9
F: Principal Facts of Gravity Data.....	10

Introduction

In April, 1981, 112 gravity stations were established in the Whetstone Mountains and surrounding areas. The Whetstone Mountains are located approximately 50 km southeast of Tucson (Fig. 1), in the Nogales 1:250,000 scale quadrangle. This gravity survey was conducted as part of the U.S. Geological Survey's (USGS) program to evaluate the mineral resource potential of proposed wilderness areas. This report presents the principal facts of the gravity survey.

Data Collection

Gravity readings were made with a LaCoste-Romberg gravity meter (G-550). Stations were referenced to local USGS bases described in Appendices B-E. These USGS bases were tied to the U.S. Department of Defense base in Willcox, Arizona (ACIC 3193-1), which is part of the International Gravity Standardization Net (IGSN), 1971, established by the Defense Mapping Aerospace Center (1974). The Willcox base is described in Appendix B. Gravity loops were started and closed at these bases to give daily meter-drift corrections.

Elevation Control

The survey area is bounded by latitudes $31^{\circ} 40'$ to $32^{\circ} 0'$ North and longitudes $110^{\circ} 15'$ to $110^{\circ} 30'$ West. Station locations and elevations were obtained from benchmarks, spot elevations, and section corners found on 1:24,000 scale USGS topographic maps. However, a few station elevations were estimated from contour interpolations when no known elevations were available and terrain was relatively flat. These points are identified with "ebe" rather than "be" preceding the station number.

For elevations based on benchmarks, the uncertainty is assumed to be .15 m. For spot elevations and section corners with map elevations, the uncertainty is assumed to be one-third of the contour interval. At a density

of 2.67 g/cm^3 , the elevation uncertainties translate to Bouguer value uncertainties as $.2 \text{ mgal/m}$. Specific elevation uncertainties for each station are included in Appendix A.

Data Reduction

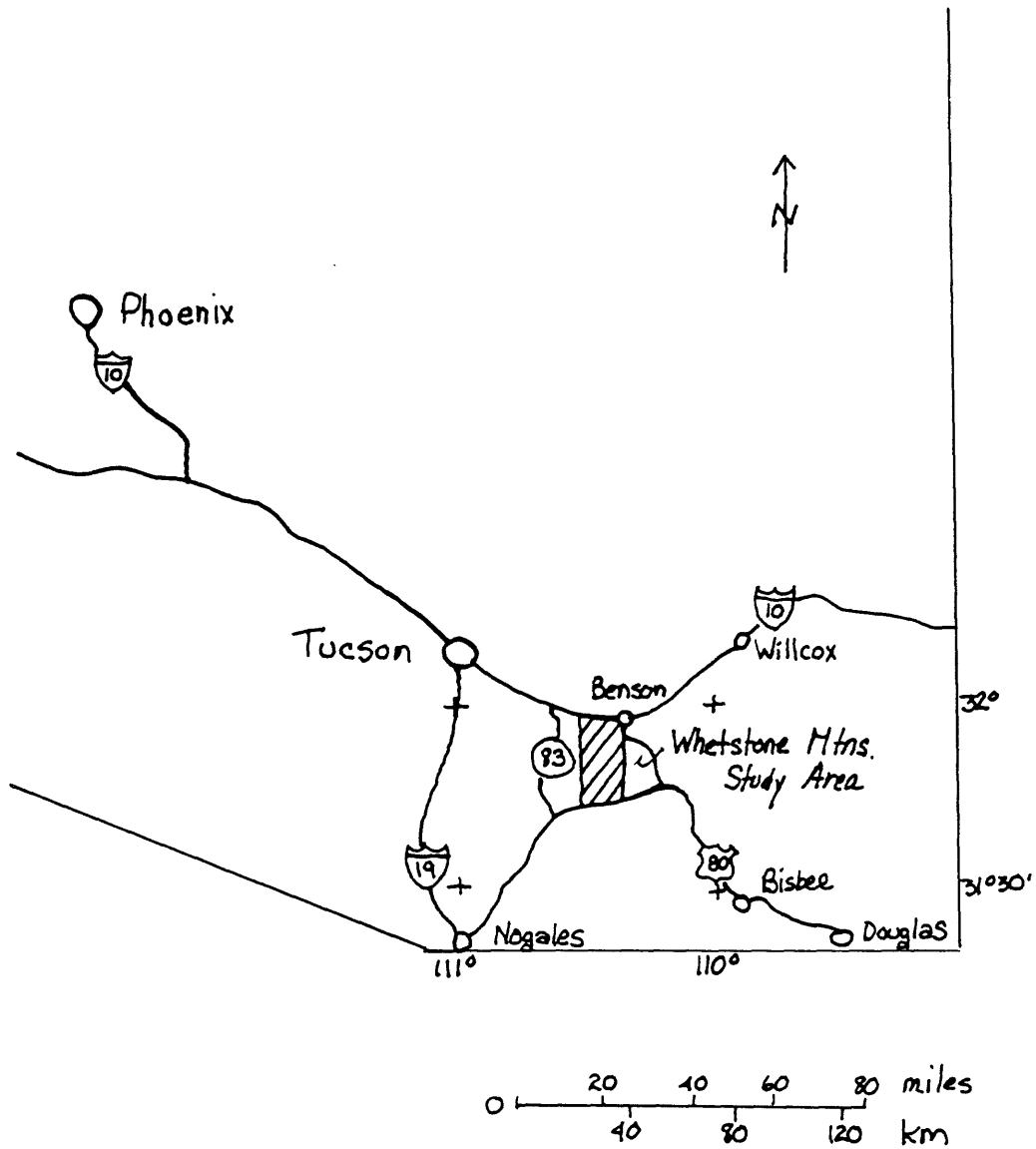
Computer programs existing on the USGS Honeywell Multics computer system were used to obtain principal facts and terrain-corrected gravity values. Program "gravity-red" written by D. Dansereau and R. Wahl (USGS, unpublished program, 1979) was used to reduce gravity meter readings to observed gravity values by calculating and correcting for earth-tide and linear meter drift. The theoretical gravity value was calculated using the 1967 formula of the Geodetic Reference System (International Association of Geodesy, 1967).

Complete terrain corrections were computed using "Bouguer" program by R. H. Godson (USGS, unpublished program 1978), correcting for the terrain from each station out to a radius of 166.7 km from the station using the method of Plouff (1977). These computed terrain corrections are based on mean elevation data digitized on a 15-second grid for corrections from 0 to 5 km; 1-minute terrain data for corrections from 5 to 21 km; and 3-minute terrain data for corrections from 21 to 166.7 km. An assumed density of 2.67 g/cm^3 was used to calculate terrain corrections. Godson's program also calculates earth curvature corrections and complete (terrain-corrected) Bouguer anomaly values. Two complete Bouguer anomaly values per station were obtained using average rock densities of 2.67 g/cm^3 and 2.57 g/cm^3 . The corrections and anomaly values are listed in Appendix F.

References

- Defense Mapping Agency Aerospace Center, 1974, World Relative Gravity Reference Network, North America, Part 2: DMAAC Reference Publication 25, with supplement updating gravity values to the International Gravity Standardization Net 1971, 1635 p.
- International Association of Geodesy, 1967, Geodetic Reference System, 1967, International Association of Geodesy Special Publication 3, 74 p.
- Plouff, D., 1977, Preliminary documentation for a FORTRAN program to compute gravity terrain corrections based on topography digitized on a geographic grid: U.S. Geological Survey Open-File Report 77-535, 31 p.

Location map of Whetstone Mtns., Arizona



Appendix A

Whetstone Mtns. Gravity Station Elevation Accuracies

Each station is given a code which refers to the kind of known elevation and the contour interval of the map on which the station is found.

Key:

A: Map has 20-foot contour interval
 B: Map has 25-foot contour interval
 C: Map has 40-foot contour interval

1: Station read at benchmark
 2: Station read at section corner
 3: Station read at well or radio tower
 4: Station read at road junction
 5: Station read at gully or bridge
 6: Station read at mountain peak or hilltop

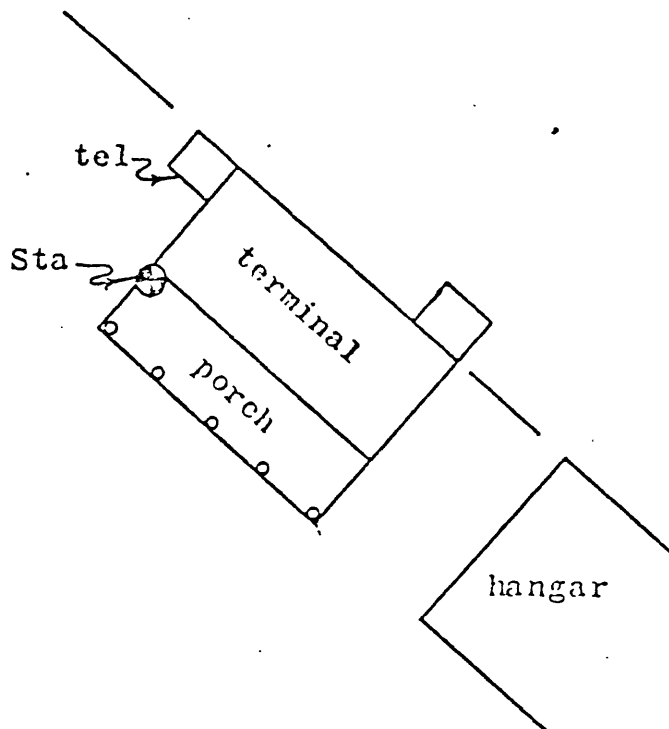
All elevations are from the topographic maps, except for stations which are identified as 'ebe' (as opposed to simply 'be'). Those stations were estimated by interpolating between the contour lines.

BE1:	A1	BE36:	A3	BE73:	C6	BE107:	C6
BE2:	A4	BE37:	A5	BE74:	C6	BE108:	C6
BE3:	A4	BE38:	A2	BE75:	C6	BE109:	A3
BE4:	A3	BE39:	A5	BE76:	C6	BE110:	C3
BE5:	C6	BE40:	A4	BE77:	C6	BE111:	C2
BE6:	C3	BE41:	B5	BE78:	C6	BE112:	C6
BE7:	C3	BE42:	B5	BE79:	C6		
BE8:	C4	BE43:	B4	BE80:	C6		
BE9:	A4	BE44:	B1	BE81:	A4		
BE10:	A4	BE45:	B4	BE82:	C4		
BE11:	A1	EBE46:	C3	BE83:	C6		
BE12:	A5	BE47:	B2	BE84:	C6		
BE13:	A1	BE48:	C4	BE85:	C6		
BE14:	A4	EBE49:	C4	BE86:	C6		
BE15:	A4	BE50:	C4	BE87:	C6		
BE16:	A4	EBF51:	C4	BE88:	C6		
BE17:	A2	BE53:	C4	BE89:	B6		
BE18:	A4	BE54:	C2	BE90:	B6		
BE19:	A4	BE55:	C4	BE91:	C6		
BE20:	A4	BE56:	C4	BE92:	C6		
BE21:	A4	BE57:	C4	BE93:	C6		
BE22:	A2	BE58:	C3	BE94:	C6		
BE23:	A4	BE59:	C3	BE95:	C6		
BE24:	C4	BE60:	C6	BE96:	C6		
EBE25:	A2	BE61:	C6	BE96A:	C6		
BE26:	C3	BE62:	A6	BE97:	C6		
BE27:	A2	BE63:	A6	BE98:	C6		
BE28:	A4	BE64:	A6	BE99:	C6		
BE29:	B2	BE65:	C6	BE100:	C6		
BE30:	B2	BE66:	C6	BE101:	C6		
BE31:	B4	BE67:	C6	BE102:	C6		
BE32:	B2	BE68:	C6	BE103:	C6		
BE33:	B4	BE69:	A6	BE104:	C6		
BE34:	B4	BE70:	C1	BE105:	C6		
BE35:	B2	BE71:	C1	BE106:	C6		

GRAVITY BASE STATION			
LATITUDE	32° 14.57'N (1)	STATION DESIGNATION	
LONGITUDE	109° 53.53'W (1)	WILCOX (sic)	
ELEVATION	1275.0 METERS (1)	COUNTRY STATE	
		USA/Arizona	
REFERENCE CODE NUMBERS		ADOPTED GRAVITY VALUE	
ACIC 3193-1		g = 979 083.11 mgals	
		ESTIMATED ACCURACY	DATE
		= 0.1 mgals	MONTH YEAR
			9/74

DESCRIPTION AND OR SKETCH

Station site is located at Cochise County Airport, on NW corner of terminal porch. (1)



(1)

REFERENCE SOURCE

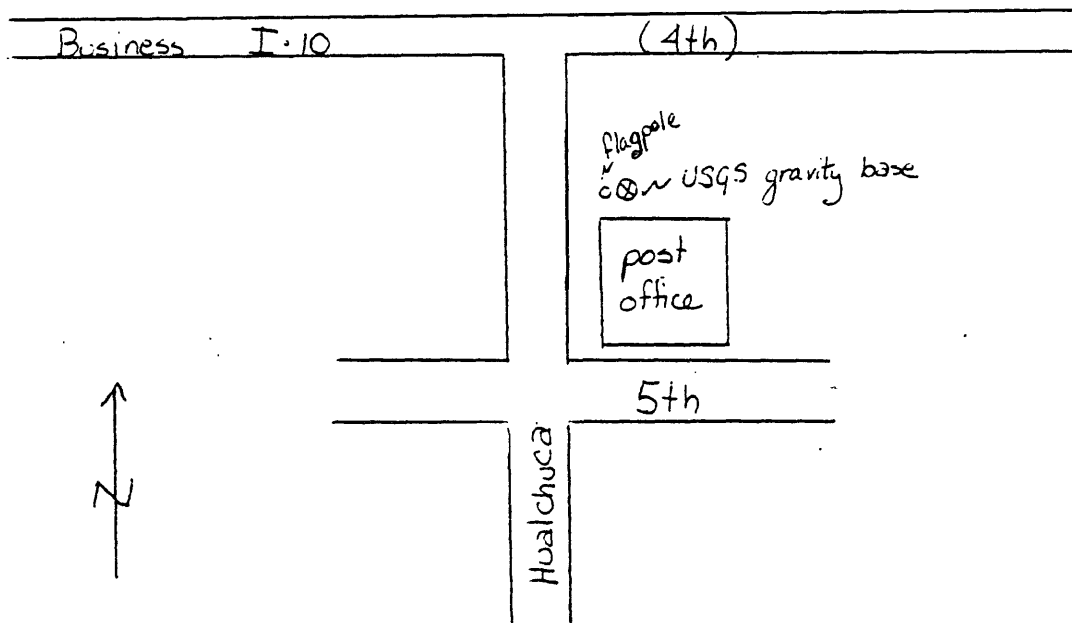
(1) 03035

U.S. GEOLOGICAL SURVEY
GRAVITY BASE STATION

STATE/COUNTRY Arizona		STATION DESIGNATION Benson Post Office		OBSERVED GRAVITY 979115.56 mgals
NEAREST TOWN Benson		LONGITUDE 110° 17.62'		LATITUDE 31° 58.04'
ELEVATION 1094m (3590') est.		TOPOGRAPHIC MAP(S) Benson 1/24,000 Nogales 1/250,000		
DATE	OBSERVER	METER	REFERENCE STATION	REFERENCE VALUE
4-3-81	Bankey	G-550	Willcox DOD	979083.11 mgals

DESCRIPTION/SKETCH

The post office is located in the town of Benson, Arizona, on the northeast corner of Hualchuca Street and 5th Street. (Business I-10 is 4th Street.) The USGS gravity base is on the east side of the flagpole in front of the post office, on the concrete sidewalk.

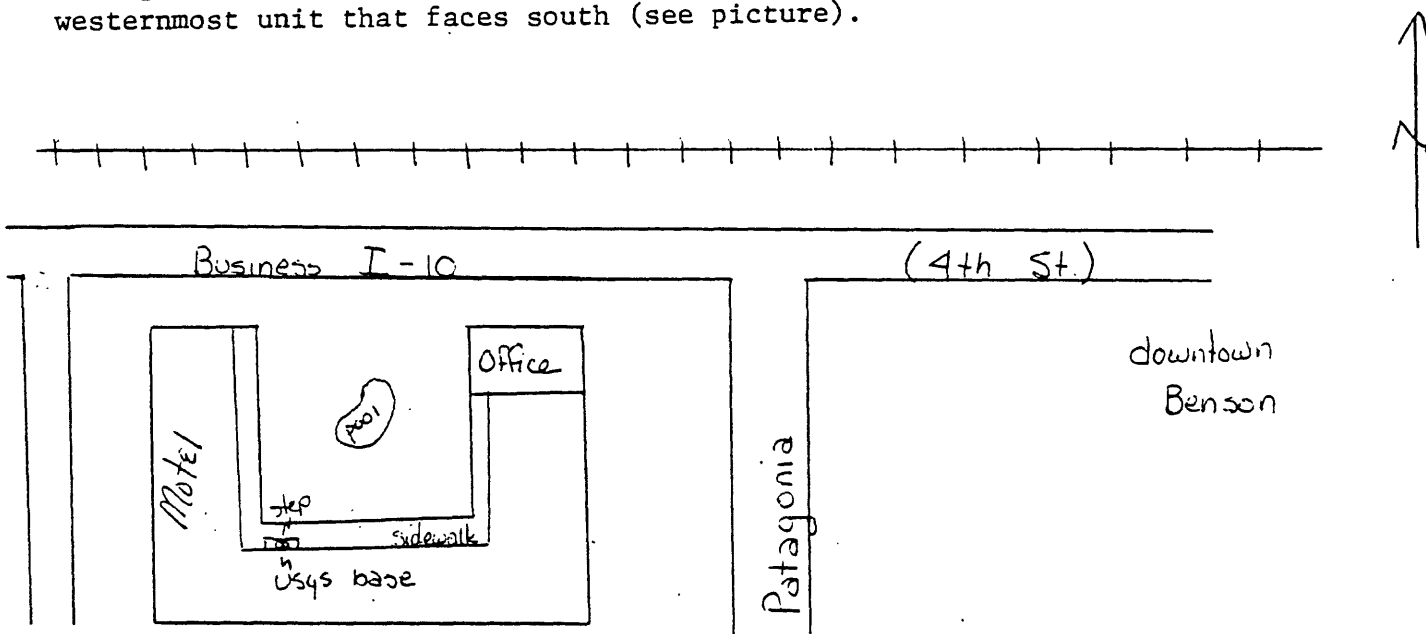


U.S. GEOLOGICAL SURVEY
GRAVITY BASE STATION

STATE/COUNTRY Arizona		STATION DESIGNATION Pine Lodge Motel		OBSERVED GRAVITY 979114.59 mgals
NEAREST TOWN Benson		LONGITUDE 110° 17.88'		LATITUDE 31° 58.11'
ELEVATION 1096 m (3595') est.		TOPOGRAPHIC MAP(S) Benson 1/24,000 Nogales 1/250,000		
DATE	OBSERVER	METER	REFERENCE STATION	REFERENCE VALUE
4-3-81	Bankey	G-550	Willcox DOD	979083.11 mgals

DESCRIPTION/SKETCH

The Pine Lodge Motel is located in the town of Benson, Arizona, on the southwest corner of Business I-10 (4th Ave.) and Patagonia Street. The USGS gravity base is read on the step outside room 10, which is the westernmost unit that faces south (see picture).



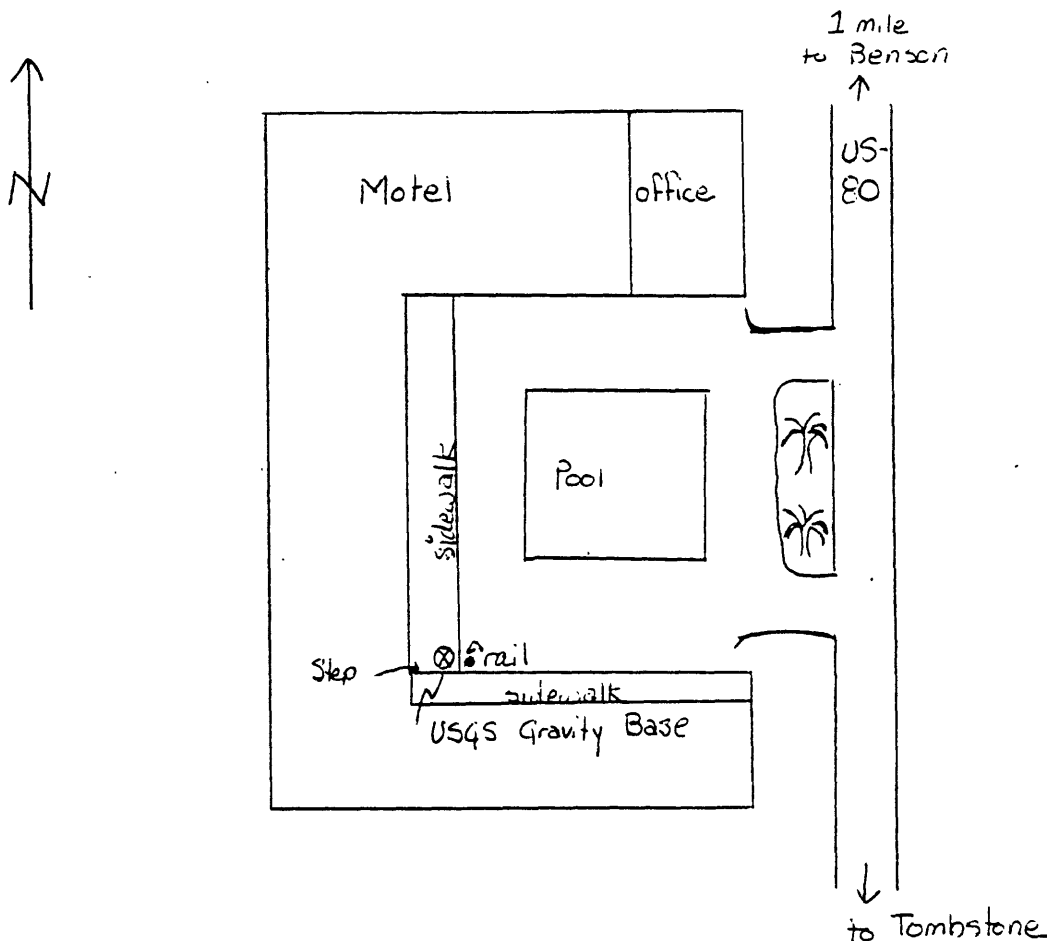
U.S. GEOLOGICAL SURVEY
GRAVITY BASE STATION

STATE/COUNTRY Arizona	STATION DESIGNATION Sahara Motel	OBSERVED GRAVITY 979114.11 mgals
NEAREST TOWN Benson	LONGITUDE 110° 17.14'	LATITUDE 31° 56.86'
ELEVATION 1106 m (3628') est.	TOPOGRAPHIC MAP(S) Benson 1/24,000 Nogales 1/250,000	

DATE	OBSERVER	METER	REFERENCE STATION	REFERENCE VALUE
4/7/81	Bankey	G-550	Benson Post Office	979115.56 mgals

DESCRIPTION/SKETCH

The Sahara Motel is located on Highway 80, approximately 1 mile south of I-10 running through Benson. The USGS gravity base is located on the southwest corner of the C-shaped motel building, where the sidewalk takes a step up. The meter is read next to the metal rail supporting the awning. (see map).



Appendix F: Principal Facts of Gravity Data

Explanation of headings

Identification

proj	Project name.
sta id	Gravity identification.

Location

latitude	North latitude in degrees minutes and hundredths of minutes.
longitude	West longitude in degrees, minutes, and hundredths of minutes.
ele	Station elevation in feet.
st	State where station is located.

Gravity

observed	Observed gravity in milligals.
theoretical	Theoretical gravity.

Corrections

terrain	Terrain correction out to 166.7km in milligals.
Bouguer	Elevation correction in milligals.
curv	Curvature correction in milligals.
special	Not used.

Anomalies

free-air	Free-air anomaly in milligals.
complete-Bouguer	Complete Bouguer anomaly in milligals for designated densities.
spec fields	Not used.

ROUIGUER GRAVITY DATA

Wheatstone Mts. Wilderness
 V. Bankey 1981
 Meter ID: a-550 Date: 06/17/81

STATION	IDENTIFICATION	LATITUDE	LONGITUDE	TIME	STATION	GRAVITY	THEORETICAL	BOUGUER	CORRECTION	SPECIAL	AIR	COMPLETE	SPEC
prof	sta-id	deg min	deg min	deg min	ELE	OBSERVED	TH	FRPAIN	BOUGUER	CURV	SPECIAL	FREE	COMPLETE
					(in ft)							ROUIGUER	FIELDS
Wild	: pine100a	31 58.11	-110 17.88	3595.0	az	979114.38	979480.93	0.34	-122.62	-1.18	0.00	-28.43	-151.89
Wild	: benson	31 58.04	-110 17.62	3590.0	az	979115.56	979480.84	0.34	-122.44	-1.18	0.00	-27.63	-150.91
Wild	: he1	31 57.35	-110 21.37	4164.0	az	979084.05	979479.91	0.57	-142.02	-1.29	0.00	-4.24	-146.98
Wild	: he2	31 56.47	-110 20.44	4189.0	az	979081.15	979478.71	0.61	-142.88	-1.29	0.00	-3.60	-147.16
Wild	: he3	31 56.24	-110 21.22	4293.0	az	979078.27	979478.41	0.71	-146.42	-1.31	0.00	3.61	-143.41
Wild	: he4	31 55.95	-110 22.11	4443.0	az	979074.47	979478.01	0.80	-151.54	-1.33	0.00	14.30	-137.77
Wild	: he5	31 54.08	-110 23.47	4824.0	az	979051.30	979475.48	1.32	-164.53	-1.39	0.00	29.48	-135.12
Wild	: he6	31 53.28	-110 23.94	5001.0	az	979039.26	979474.41	1.94	-170.57	-1.41	0.00	35.16	-134.88
Wild	: he7	31 53.10	-110 23.29	4993.0	az	979036.68	979474.16	2.08	-170.30	-1.41	0.00	32.07	-137.55
Wild	: he8	31 53.49	-110 22.97	4862.0	az	979046.21	979474.69	1.61	-165.83	-1.39	0.00	28.76	-136.85
Wild	: benson	31 58.04	-110 17.62	3590.0	az	979115.56	979480.84	0.34	-122.44	-1.18	0.00	-27.63	-150.91
Wild	: pine100a	31 58.11	-110 17.88	3595.0	az	979114.38	979480.93	0.34	-122.62	-1.18	0.00	-28.15	-151.61
Wild	: he9	31 54.07	-110 20.45	4427.0	az	979070.92	979475.47	0.77	-150.99	-1.33	0.00	11.79	-139.76
Wild	: be10	31 54.78	-110 19.20	4203.0	az	979079.05	979476.43	0.60	-143.35	-1.30	0.00	-2.10	-146.15
Wild	: be11	31 55.06	-110 18.49	4064.0	az	979085.90	979476.81	0.55	-138.61	-1.27	0.00	-8.70	-148.03
Wild	: be12	31 53.86	-110 17.86	4021.0	az	979085.44	979475.19	0.52	-137.14	-1.26	0.00	-11.58	-149.47
Wild	: be13	31 52.21	-110 16.94	4006.0	az	979086.42	979472.96	0.41	-136.63	-1.26	0.00	-9.78	-147.26
Wild	: be14	31 52.82	-110 18.59	4227.0	az	979075.07	979473.78	0.68	-144.17	-1.30	0.00	-1.17	-145.96
Wild	: be15	31 53.28	-110 19.32	4307.0	az	979073.24	979474.41	0.70	-146.90	-1.31	0.00	3.90	-143.61
Wild	: be16	31 53.83	-110 20.18	4428.0	az	979070.84	979475.15	0.79	-151.03	-1.33	0.00	12.13	-139.44
Wild	: be17	31 50.83	-110 20.46	4575.0	az	979053.90	979471.09	1.18	-156.04	-1.35	0.00	13.06	-143.16
Wild	: be18	31 50.29	-110 20.56	4534.0	az	979054.59	979470.37	1.17	-154.64	-1.35	0.00	10.63	-144.19
Wild	: be19	31 48.92	-110 20.83	4575.0	az	979048.76	979468.52	1.11	-156.04	-1.35	0.00	10.50	-145.79
Wild	: be20	31 48.74	-110 21.58	4701.0	az	979045.17	979468.55	1.51	-160.34	-1.37	0.00	18.73	-141.47
Wild	: be21	31 51.77	-110 21.96	4789.0	az	979040.37	979472.37	4.49	-163.34	-1.38	0.00	18.38	-141.85
Wild	: be22	31 48.19	-110 22.00	4797.0	az	979040.63	979467.53	1.82	-163.61	-1.39	0.00	24.23	-138.95
Wild	: pine100a	31 58.11	-110 17.88	3595.0	az	979114.70	979480.93	0.34	-122.62	-1.18	0.00	-28.11	-151.57
Wild	: be23	31 46.69	-110 20.98	4544.0	az	979047.04	979465.78	0.34	-122.62	-1.18	0.00	-27.65	-151.11
Wild	: be24	31 46.85	-110 22.53	4828.0	az	979037.76	979465.73	0.99	-154.98	-1.35	0.00	8.60	-146.74
Wild	: be25	31 47.32	-110 22.00	4650.0	az	979047.20	979466.36	1.81	-164.67	-1.39	0.00	26.07	-138.18
Wild	: be26	31 46.96	-110 23.81	5163.0	az	979018.03	979465.88	1.76	-158.60	-1.37	0.00	18.15	-140.05
Wild	: be27	31 46.44	-110 21.99	4708.0	az	979041.70	979465.17	2.65	-176.09	-1.43	0.00	37.69	-137.18
Wild	: be28	31 45.40	-110 21.99	4536.0	az	979047.22	979463.77	1.28	-160.58	-1.37	0.00	19.29	-141.38
Wild	: be29	31 44.68	-110 22.01	4497.0	az	979044.87	979462.80	0.94	-154.71	-1.35	0.00	10.04	-145.08
Wild	: be30	31 44.69	-110 24.04	4852.0	az	979035.01	979462.82	0.80	-153.38	-1.34	0.00	4.99	-148.93
Wild	: be31	31 43.63	-110 23.32	4641.0	az	979042.49	979461.39	1.28	-165.49	-1.39	0.00	28.49	-137.11
Wild	: be32	31 42.94	-110 22.00	4462.0	az	979041.30	979460.46	0.96	-158.29	-1.36	0.00	17.57	-141.13
Wild	: be33	31 41.54	-110 22.01	4443.0	az	979041.47	979458.58	0.60	-152.19	-1.34	0.00	0.47	-152.45
Wild	: be34	31 41.56	-110 20.99	4385.0	az	979039.98	979458.60	0.50	-151.54	-1.33	0.00	0.74	-151.63
Wild	: be34	31 41.56	-110 20.99	4385.0	az	979039.98	979458.60	0.41	-149.56	-1.33	0.00	-6.22	-156.70

ROUGHER GRAVITY DATA

Whetstone Mts. Wilderness
 V. Bankey 1981
 Meter ID: a-550 Date: 06/17/81

STATION IDENTIFICATION prof	sta-id	LATITUDE dec min	LONGITUDE deg min	ELE ST (in ft)	URSFRVED G R A V I T Y THEORETICAL	TERRAIN C O R R E C T I O N S BOUGUER CURV	SPECIAL	FREE AIR	A N O M A L I E S COMPLETE-BOUGUER SPEC d1=2.67 d2=2.57 FIELDS
Wild :	b35	31 42.95	-110 20.99	4370.0 az	979043.07	0.49	0.00	-6.42	-156.30 -150.68
Wild :	b36	31 45.07	-110 19.99	4286.0 az	979050.80	0.64	0.00	-9.38	-156.23 -150.73
Wild :	pineloda	31 56.11	-110 17.88	3595.0 az	979114.95	0.34	0.00	-27.86	-151.32 -146.69
Wild :	pineloda	31 58.11	-110 17.88	3595.0 az	979114.98	0.34	0.00	-27.83	-151.29 -146.66
Wild :	b37	31 51.80	-110 20.44	4590.0 az	979061.73	1.11	0.00	21.00	-135.80 -129.93
Wild :	b38	31 49.95	-110 21.94	4650.0 az	979038.40	2.22	0.00	24.60	-139.99 -133.83
Wild :	b39	31 47.42	-110 20.98	4510.0 az	979050.15	1.01	0.00	7.80	-146.36 -140.59
Wild :	b40	31 45.14	-110 20.98	4402.0 az	979048.46	0.66	0.00	-0.97	-151.78 -146.13
Wild :	b41	31 41.50	-110 24.00	4627.0 az	979038.92	0.80	0.00	15.55	-142.83 -136.90
Wild :	b42	31 41.61	-110 24.60	4647.0 az	979037.31	1.11	0.00	15.67	-143.08 -137.13
Wild :	b43	31 42.29	-110 26.24	4767.0 az	979032.22	0.97	0.00	20.94	-142.06 -135.95
Wild :	b44	31 42.77	-110 27.42	4819.0 az	979030.23	0.89	0.00	23.20	-141.66 -135.49
Wild :	b45	31 43.43	-110 29.14	4907.0 az	979024.36	1.22	0.00	24.71	-142.83 -136.56
Wild :	eb46	31 46.14	-110 27.95	5580.0 az	978993.44	2.97	0.00	53.40	-135.41 -128.34
Wild :	b47	31 44.74	-110 29.13	5068.0 az	979021.33	1.02	0.00	35.05	-138.20 -131.71
Wild :	eb48	31 45.83	-110 29.13	5205.0 az	979013.56	1.29	0.00	38.69	-138.98 -132.32
Wild :	eb49	31 46.55	-110 28.34	5425.0 az	979000.31	2.10	0.00	45.15	-139.23 -132.33
Wild :	b50	31 47.05	-110 20.10	5256.0 az	979011.85	2.07	0.00	40.13	-138.50 -131.84
Wild :	eb51	31 47.35	-110 30.17	4900.0 az	979034.83	1.07	0.00	29.24	-138.22 -131.91
Wild :	pineloda	31 58.11	-110 17.88	3595.0 az	979114.95	0.34	0.00	-27.86	-151.32 -146.69
Wild :	pineloda	31 58.11	-110 17.88	3595.0 az	979114.80	0.34	0.00	-28.02	-151.47 -146.85
Wild :	b53	31 57.50	-110 26.04	4231.0 az	979092.69	0.51	0.00	10.50	-134.60 -129.17
Wild :	b54	31 56.91	-110 25.01	4337.0 az	979087.46	0.61	0.00	16.03	-132.60 -127.03
Wild :	b55	31 56.97	-110 26.32	4288.0 az	979087.98	0.57	0.00	11.87	-135.12 -129.62
Wild :	eb56	31 57.11	-110 27.43	4192.0 az	979092.56	0.54	0.00	7.23	-136.50 -131.12
Wild :	b57	31 57.44	-110 28.25	4115.0 az	979099.64	0.73	0.00	6.62	-134.28 -129.00
Wild :	pineloda	31 58.11	-110 17.88	3595.0 az	979114.88	0.34	0.00	-27.93	-151.39 -146.76
Wild :	pineloda	31 58.11	-110 17.88	3595.0 az	979114.59	0.34	0.00	-28.22	-151.68 -147.05
Wild :	b58	31 53.53	-110 25.47	4858.0 az	979047.25	2.03	0.00	29.37	-135.68 -129.50
Wild :	b59	31 53.80	-110 26.65	4657.0 az	979059.87	1.76	0.00	22.67	-135.77 -129.84
Wild :	pineloda	31 58.11	-110 17.88	3595.0 az	979114.71	0.34	0.00	-28.10	-151.56 -146.94
Wild :	sahara	31 56.86	-110 17.14	3630.0 az	979114.11	0.39	0.00	-23.73	-148.33 -143.67
Wild :	sahara	31 56.86	-110 17.14	3630.0 az	979114.11	0.39	0.00	-23.73	-148.33 -143.67
Wild :	b60	31 51.65	-110 23.03	6081.0 az	978916.03	17.25	0.00	72.05	-140.09 -132.14
Wild :	b61	31 50.94	-110 22.70	6365.0 az	978934.07	15.92	0.00	61.35	-141.34 -133.74
Wild :	b62	31 50.90	-110 21.75	5890.0 az	978966.49	22.21	0.00	49.18	-131.00 -124.25
Wild :	b63	31 50.70	-110 21.31	5078.0 az	979021.50	4.20	0.00	28.12	-142.29 -135.91
Wild :	b64	31 50.32	-110 22.43	5798.0 az	978971.84	10.72	0.00	46.66	-141.85 -134.79
Wild :	b65	31 51.57	-110 24.31	7100.0 az	978885.57	21.60	0.00	81.08	-141.00 -132.68
Wild :	b66	31 51.51	-110 25.51	7010.0 az	978895.56	19.85	0.00	82.69	-138.06 -129.80

BOUGUER GRAVITY DATA

Wheatstone Mts. wilderness
 V. Bankey 1981
 Meter ID: q-550 Date: 06/17/81

STATION IDENTIFICATION	L U C A T I O N S	G R A V I T Y	C O R R E C T I O N S	A N O M A L I E S									
prof sta-id	LATITUDE deg min	LONGITUDE deg min	TERRAIN BOUGUER CURV	FREE COMPLETE-ROUGUER SPEC AIR d1=2.67 d2=2.57 FIELDS									
	ELE (in ft)	URSERVED THEORETICAL	SPECIAL										
Wild :	be07	31 51.19	-110 24.96	7354.0 az	978870.67	979471.59	21.69	-250.82	-1.51	0.00	90.56	-140.0A	-131.44
Wild :	be6A	31 50.72	-110 24.48	7344.0 az	978867.95	979470.95	23.42	-250.4A	-1.51	0.00	87.54	-141.03	-132.47
Wild :	sahara	31 56.86	-110 17.14	3630.0 az	979114.11	979479.24	0.39	-123.81	-1.19	0.00	-23.73	-148.33	-143.67
Wild :	be09	31 48.23	-110 22.46	5390.0 az	978999.92	979467.59	7.50	-183.84	-1.45	0.00	39.21	-138.58	-131.92
Wild :	be70	31 46.32	-110 22.70	5409.0 az	978997.85	979465.02	6.76	-184.49	-1.45	0.00	41.50	-137.68	-130.97
Wild :	sahara	31 56.86	-110 17.14	3630.0 az	979114.11	979479.24	0.39	-123.81	-1.19	0.00	-23.73	-148.33	-143.67
Wild :	sahara	31 56.86	-110 17.14	3630.0 az	979114.11	979479.24	0.39	-123.81	-1.19	0.00	-23.73	-148.33	-143.67
Wild :	be71	31 49.4A	-110 25.74	7711.0 az	978841.21	979469.27	27.13	-263.00	-1.49	0.00	96.96	-140.40	-131.51
Wild :	be73	31 49.85	-110 27.21	6359.0 az	978943.13	979469.77	10.21	-216.89	-1.51	0.00	71.32	-136.87	-129.07
Wild :	be74	31 49.00	-110 27.58	5896.0 az	978972.80	979468.63	6.69	-201.16	-1.49	0.00	5A.80	-137.17	-129.83
Wild :	be75	31 50.96	-110 27.43	5845.0 az	978974.30	979471.27	6.19	-199.36	-1.49	0.00	52.67	-141.98	-134.69
Wild :	be76	31 50.09	-110 28.19	5732.0 az	978982.98	979470.09	6.84	-195.50	-1.48	0.00	51.91	-138.23	-131.11
Wild :	be77	31 50.36	-110 28.95	5319.0 az	979011.88	979470.46	4.95	-181.42	-1.44	0.00	41.62	-136.29	-129.63
Wild :	be7A	31 51.71	-110 28.33	5604.0 az	978994.62	979472.2A	9.09	-191.14	-1.47	0.00	49.32	-134.19	-127.32
Wild :	be79	31 51.30	-110 27.28	5345.0 az	979015.66	979471.73	2.99	-182.30	-1.45	0.00	46.58	-134.1A	-127.41
Wild :	be80	31 52.17	-110 26.51	6390.0 az	978938.64	979472.91	20.55	-217.94	-1.51	0.00	66.61	-132.30	-124.85
Wild :	sahara	31 56.86	-110 17.14	3630.0 az	979114.11	979479.24	0.39	-123.81	-1.19	0.00	-23.73	-148.33	-143.67
Wild :	sahara	31 56.86	-110 17.14	3630.0 az	979114.11	979479.24	0.39	-123.81	-1.19	0.00	-23.73	-148.33	-143.67
Wild :	sahara	31 56.86	-110 17.14	3630.0 az	979114.11	979479.24	0.39	-123.81	-1.19	0.00	-23.73	-148.33	-143.67
Wild :	be81	31 54.89	-110 21.81	4525.0 az	979060.86	979476.58	0.89	-154.33	-1.35	0.00	9.84	-144.96	-139.16
Wild :	be82	31 55.45	-110 22.67	4520.0 az	979072.29	979477.34	0.84	-154.16	-1.35	0.00	20.04	-134.63	-128.84
Wild :	be83	31 56.24	-110 21.22	4293.0 az	979078.34	979478.41	0.71	-146.42	-1.31	0.00	3.68	-143.34	-137.83
Wild :	sahara	31 56.86	-110 17.14	3630.0 az	979114.11	979479.24	0.39	-123.81	-1.19	0.00	-23.73	-148.33	-143.67
Wild :	sahara	31 56.86	-110 17.14	3630.0 az	979114.11	979479.24	0.39	-123.81	-1.19	0.00	-23.73	-148.33	-143.67
Wild :	sahara	31 56.86	-110 17.14	3630.0 az	979114.11	979479.24	0.39	-123.81	-1.19	0.00	-23.73	-148.33	-143.67
Wild :	be83	31 49.30	-110 23.15	6652.0 az	978909.49	979469.03	24.28	-226.8A	-1.52	0.00	65.96	-138.16	-130.51
Wild :	be84	31 49.37	-110 24.09	6962.0 az	97888A.33	979469.13	23.45	-237.45	-1.52	0.00	73.83	-141.69	-133.61
Wild :	be85	31 47.69	-110 25.48	7319.0 az	978867.61	979466.86	22.45	-249.63	-1.51	0.00	88.93	-139.76	-131.19
Wild :	be86	31 46.52	-110 26.29	7420.0 az	978860.27	979465.28	24.53	-253.0A	-1.50	0.00	92.67	-137.38	-128.77
Wild :	be87	31 46.56	-110 26.81	6924.0 az	978897.64	979465.34	15.36	-236.16	-1.52	0.00	83.37	-138.95	-130.62
Wild :	be8A	31 45.49	-110 25.85	6218.0 az	978946.05	979463.90	10.65	-212.08	-1.51	0.00	66.86	-136.08	-128.47
Wild :	be80	31 44.06	-110 25.41	6193.0 az	978934.81	979461.97	17.87	-211.23	-1.50	0.00	55.20	-139.66	-132.36
Wild :	be90	31 42.73	-110 24.30	578A.0 az	978956.44	979460.18	14.06	-197.41	-1.48	0.00	40.55	-144.29	-137.36
Wild :	be91	31 45.00	-110 23.40	5152.0 az	979012.77	979463.36	4.60	-175.72	-1.43	0.00	33.92	-138.63	-132.17
Wild :	be92	31 45.53	-110 23.96	5652.0 az	978976.79	979463.95	10.58	-192.77	-1.47	0.00	44.34	-139.32	-132.44
Wild :	be93	31 46.10	-110 24.13	5730.0 az	978975.95	979464.72	9.42	-195.43	-1.4A	0.00	50.07	-137.42	-130.40
Wild :	be94	31 47.56	-110 23.19	6388.0 az	978927.24	979466.69	18.88	-217.8A	-1.51	0.00	61.24	-139.27	-131.76
Wild :	be95	31 47.09	-110 24.96	6170.0 az	978952.72	979466.05	9.24	-210.44	-1.50	0.00	66.86	-135.84	-128.25
Wild :	be96	31 48.09	-110 24.14	6618.0 az	97891A.49	979467.40	15.8A	-225.72	-1.52	0.00	73.39	-137.96	-130.05
Wild :	sahara	31 56.86	-110 17.14	3630.0 az	979114.11	979479.24	0.39	-123.81	-1.19	0.00	-23.73	-148.33	-143.67
Wild :	sahara	31 56.86	-110 17.14	3630.0 az	979114.11	979479.24	0.39	-123.81	-1.19	0.00	-23.73	-148.33	-143.67
Wild :	be96A	31 48.09	-110 24.14	6145.0 az	978956.95	979467.40	6.30	-209.59	-1.50	0.00	67.40	-137.39	-129.72

Whetstone Mts. wilderness
 V. Bankey 19A1
 Meter ID: G-55A Date: 06/17/81

STATION IDENTIFICATION	LONGITUDE	LATITUDE	TIME	STATION ELEVATION (in ft)	OBSERVED GRAVITY	TERRAIN BOUGUER CURV	CORRECTED BOUGUER CURV	SPECTRAL	FREE AIR	ANOMALY	COMPLETE BOUGUER SPEC
prof	sta-id	deg min	deg min	deg min	ST	THEORETICAL	TERRAIN BOUGUER CURV	SPECTRAL	AIR	ANOMALY	COMPLETE BOUGUER SPEC
wild	be97	31 53.15	-110 25.67	5258.0	az	979019.97	979474.23	0.00	40.21	-137.22	-130.57
wild	be98	31 54.58	-110 25.69	4927.0	az	979043.32	979476.16	0.00	30.51	-136.63	-130.37
wild	be99	31 53.23	-110 27.09	5344.0	az	979013.56	979474.34	0.00	41.78	-135.22	-128.59
wild	be100	31 53.63	-110 27.95	4922.0	az	979044.98	979474.88	0.00	32.99	-132.77	-126.56
wild	be102	31 50.35	-110 26.66	6420.0	az	978939.26	979470.45	0.00	72.50	-137.30	-129.44
wild	be103	31 47.68	-110 26.50	6184.0	az	978954.99	979466.84	0.00	69.65	-136.02	-128.32
wild	be104	31 47.49	-110 27.84	5605.0	az	978990.67	979466.59	0.00	51.17	-137.13	-130.08
wild	be105	31 48.16	-110 27.23	5768.0	az	978982.46	979467.49	0.00	57.38	-136.60	-129.33
wild	be106	31 49.05	-110 28.78	5362.0	az	979002.51	979468.70	0.00	38.06	-143.21	-136.42
wild	be107	31 49.47	-110 29.17	5038.0	az	979030.68	979469.26	0.00	35.20	-136.31	-129.89
wild	be108	31 53.10	-110 22.62	5342.0	az	979010.21	979474.16	0.00	38.41	-137.68	-131.08
wild	be109	31 52.26	-110 22.40	5170.0	az	979022.25	979473.02	0.00	35.42	-139.16	-132.62
wild	sahara	31 56.86	-110 17.14	3630.0	az	979114.11	979479.24	0.00	-23.73	-148.33	-143.67
wild	benison	31 58.04	-110 17.62	3590.0	az	979115.56	979480.84	0.00	-27.63	-150.91	-146.30
wild	be110	31 55.82	-110 28.83	4359.0	az	979081.31	979477.84	0.00	13.42	-135.65	-130.07
wild	be111	31 54.73	-110 28.04	4475.0	az	979073.77	979476.36	0.00	18.27	-134.72	-128.99
wild	be112	31 59.43	-110 27.85	4412.0	az	979078.55	979482.72	0.00	10.76	-135.08	-129.62
wild	benison	31 58.04	-110 17.62	3590.0	az	979115.56	979480.84	0.00	-27.63	-150.91	-146.30