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Richmond G Albert, January 18, 1960 27p

Cambridge, Massachusetts

March 7, 1960

ERRATA

In Special Report No. 31 of the Smithsonian Astrophysical Observatory the orbital data for July and August 1959, listed under Operational Information, are in error and are to be disregarded.

Corrected orbits for these months will appear in a forthcoming Special Report.

Smithsonian Astrophysical Observatory
60 Garden Street
Cambridge 38, Massachusetts

CASE FILE COPY

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CATALOGUE OF SATELLITE OBSERVATIONS FOR JULY AND AUGUST, 1959

by

Richmond G. Albert [1]

Introduction

Beginning with the current issue, the Smithsonian Astrophysical Observatory will publish the catalogue of satellite observations as a series of reports, each report relating to one or more satellites. The greatly increased volume of observations received by the Observatory necessitates this system.

The present report is the first of the series for July and August, 1959, which will list observations for dates not earlier than January 1, 1959, of all artificial earth satellites except those for which SAO does not have tracking responsibility. Minitrack and Doppler data received by SAO for July and August, 1959, are not included. The observations listed include those from Baker-Nunn camera stations, Moonwatch teams, U.S. and foreign observatories, military installations, Phototrack stations, and miscellaneous observers. Some of the observations have been received from Project Space Track of the Air Force Cambridge Research Center, under an arrangement involving an exchange of all observations of artificial earth satellites.

The catalogue presents three groups of observations, each in chronological order, for each satellite in the following order:

1. Current Observations: A list of observations for July and August, 1959.

2. Addenda: Observations, not previously included in a Special Report, for the period from January 1, 1959, through June 30, 1959.

3. Corrigenda: A list of corrected forms of observations previously published.

No attempt will be made to list addenda and/or corrigenda for satellite observations made earlier than January 1, 1959, except those of Satellite 1958 Zeta, for which we list all addenda and corrigenda received.

Units

The date given lists the month and day of the observation; the time (U.T.) is given in hours, minutes and seconds; right ascension is in hours, minutes and seconds; declination, azimuth and altitude are in degrees, minutes and seconds; azimuth is measured from North through East; the range is in meters.

An explanation of the index code appeared in Special Report No. 23 [2] which includes indices for time precision, position precision, coordinate system and refraction correction, equator and equinox of reference, and type of instrumentation.

A complete up-to-date list of station coordinates will appear in the near future.

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[1] Mathematician-Programmer, Optical Satellite Tracking Program.

[2] Copies of the explanation are available on request from the Smithsonian Astrophysical Observatory.

Operational Information

The following elements and current estimates of the lifetimes of artificial earth satellites were obtained by the SAO personnel listed. Orbital elements for 1958 ϵ are omitted because no definitive orbit was obtained for the period covered by this report.

For 1958 α, 1958 β1 and 1958 β2, tables of residuals are given which compare the elements obtained from more precise short-interval orbits with those evaluated from bimonthly orbits.

Satellite 1958 Alpha (Explorer I)

Mr. Jay C. Tapp

T_o = 1959 July 0.0 U.T.

$\omega = 260^\circ.719 + 6^\circ.8544t + 5^\circ.4671 \times 10^{-4}t^2$

$\Omega = 238^\circ.556 - 4^\circ.5928t - 4^\circ.1984 \times 10^{-4}t^2$

$i = 33^\circ.225$

$e = 0.11714 - 4.5465 \times 10^{-5}t$

$M = 0.66314 + 13.03605t + 5.8938 \times 10^{-4}t^2 - 1.3777 \times 10^{-6}t^3$

Date of demise: January, 1963

The following residuals are the differences at the respective epochs, the actual mean elements minus the elements computed from the above fitted equations, where the actual mean elements are obtained from a differential orbit improvement program that uses Baker-Nunn observations exclusively for 6-day intervals from Epoch -3 days to Epoch +3 days.

Element Residuals

Epoch (U.T.)	$\Delta\omega$ (10^{-2} deg.)	$\Delta\Omega$ (10^{-2} deg.)	Δi (10^{-3} deg.)	Δe (10^{-5})	ΔM (10^{-4} rev.)
July 1.0	-21 ± 4	3 ± 1	7 ± 4	- 4 ± 1	-13 ± 1
5.0	- 3 7	3 4	3 4	- 3 2	25 4
9.0	9 1	- 2 1	- 1 4	- 1 1	23 2
13.0	10 2	- 1 1	0 4	- 2 2	- 8 2
17.0	10 10	- 3 3	1 10	2 3	-38 4
21.0	12 4	1 3	- 1 5	7 3	-35 4
25.0	5 3	0 4	6 5	4 1	-13 5
29.0	-10 4	2 4	3 6	5 2	5 4
Aug. 2.0	-19 9	- 4 6	5 7	2 3	8 3
6.0	-16 10	5 4	6 10	- 6 5	16 10
10.0	-12 12	3 5	- 7 6	- 5 5	-15 4
14.0	-30 14	2 3	-12 8	0 5	-17 7
18.0	-15 4	- 3 2	-23 9	1 1	-13 3
22.0	20 13	- 3 6	-18 9	-10 5	-40 5
26.0	23 12	0 9	- 8 10	- 3 3	30 20
30.0	26 10	0 4	-14 8	4 2	-37 4

T_o = 1959 July 3.0 U.T.

$\omega = 286^\circ.561 + 4^\circ.1546t + 1^\circ.8 \times 10^{-6}t^2$

$\Omega = 254^\circ.035 - 2^\circ.8324t - 2^\circ.48 \times 10^{-5}t^2$

$i = 34^\circ.261 - 2^\circ.77 \times 10^{-4}t$

$e = 0.20680 - 8.8 \times 10^{-7}t$

$M = 0.28460 + 10.398344t + 8.785 \times 10^{-6}t^2$

Date of demise: 2260

The above elements are based exclusively upon 280 Baker-Nunn photographic and Moonwatch visual observations.

The following residuals are the differences at the respective epochs, the actual mean elements minus the elements computed from the above fitted equations, where the actual mean elements are obtained from a differential orbit improvement program that uses observations for 8-day intervals from Epoch -4 days to Epoch +4 days.

Element Residuals

Epoch (U.T.)	$\Delta\omega$ (10^{-2} deg.)		$\Delta\Omega$ (10^{-2} deg.)		Δi (10^{-3} deg.)		Δe (10^{-5})		ΔM (10^{-5} rev.)	
July 1.0	3 ±	1	4 ±	1	6 ±	3	-36 ±	6	18 ±	2
5.0	17	1	18	1	4	3	-36	6	19	2
9.0	51	1	16	1	- 6	3	-39	6	13	2
13.0	50	2	0	1	- 1	4	-26	7	8	3
17.0	42	2	-10	1	- 1	5	-11	9	- 2	4
21.0	66	4	4	2	1	6	16	13	-12	6
25.0	23	2	2	1	3	2	37	8	- 8	3
29.0	-12	1	2	1	5	2	57	6	-10	2
Aug. 2.0	-48	1	3	1	7	2	65	6	- 5	2
6.0	-105	1	12	1	12	2	65	6	0	2
10.0	-134	1	- 6	1	20	2	80	5	9	1
14.0	-176	1	-17	1	19	3	67	11	21	2
18.0	-264	2	12	2	24	3	66	11	42	5
22.0	-304	13	66	2	31	3	107	49	27	61
26.0	-505	7	49	2	41	4	19	32	131	33
30.0	-720	16	74	3	40	11	158	92	262	80

Satellite 1958 Beta 2 (Vanguard I) Miss Carol A. Martin

T_o = 1959 July 1.0 U.T.

$\omega = 41^\circ.798 + 4^\circ.38575t + 5^\circ.834 \times 10^{-4}t^2$

$\Omega = 174^\circ.673 - 3^\circ.01874t - 7^\circ.36 \times 10^{-5}t^2$

$i = 34^\circ.241$

$e = 0.19045 - 2.703 \times 10^{-5}t$

$M = 0.046094 + 10.741095t + 6.520 \times 10^{-6}t^2$

Date of demise: 2160

The above elements are based on 375 Minitrack and Baker-Nunn observations.

The following residuals are the differences at the respective epochs, the actual mean elements minus the elements computed from the above fitted equations, where the actual mean elements are obtained from a differential orbit improvement program that uses observations for 8-day intervals from Epoch -4 days to Epoch +4 days.

Element Residuals

Epoch U.T.	$\Delta\omega$ (10^{-2} deg.)		$\Delta\Omega$ (10^{-2} deg.)		Δi (10^{-3} deg.)		Δe (10^{-5})		ΔM (10^{-5} rev.)	
July 1.0	- 3 ±	0	3 ±	0	- 4 ±	0	-35 ±	1	-181 ±	1
5.0	- 1	0	1	0	- 6	0	- 9	1	-170	1
9.0	2	0	- 2	0	- 8	1	9	2	-148	1
13.0	-96	4	6	1	- 5	4	-76	10	238	14
17.0	2	1	- 4	1	-23	2	29	4	-95	3
21.0	1	1	- 5	1	-25	3	28	5	-52	4
25.0	- 2	1	- 1	1	-36	4	17	6	-15	6
29.0	- 3	1	3	1	-52	4	- 2	4	7	3
Aug. 2.0	0	0	1	0	-12	3	11	2	24	2
6.0	- 2	1	1	0	20	2	1	2	37	3
10.0	- 1	2	1	1	19	2	- 7	3	31	7
14.0	- 6	1	1	0	16	2	-11	4	41	3
18.0	8	3	- 1	1	3	2	-37	8	-43	1
22.0	- 4	7	-39	3	-31	7	-54	28	77	13
26.0	-41	3	- 3	1	26	3	-16	10	27	6
30.0	-45	1	- 1	0	9	0	68	3	- 2	2

Satellite 1958 Delta 2 (Sputnik III) Dr. Yoshihide Kozai

T_o = 1959 Aug. 8.0 U.T.

ω = $(244^\circ.92 \pm 0^\circ.08) - (0^\circ.4097 \pm 0^\circ.0020)\,t$

Ω = $(221^\circ.863 \pm 0^\circ.011) - (2^\circ.9807 \pm 0^\circ.0041)\,t - 6^\circ.8 \times 10^{-4} t^2$

i = $65^\circ.156 \pm 0^\circ.010$

e = $(0.06761 \pm 0.00011) - (1.01 \pm 0.05) \times 10^{-4} t$

M = $(0.95737 \pm 0.00022) + (14.682269 \pm 0.000017)\,t$

$+ (1.2765 \pm 0.0025) \times 10^{-3} t^2 - (4.73 \pm 0.53) \times 10^{-6} t^2$

Date of demise: February, 1960

These elements are based on Baker-Nunn and Meudon Observatory observations from August 4 to August 12. The uncertainty is less than 2 km within this eight-day period.

For July, few observations were received from stations in the Southern hemisphere because of poor visibility. For the same reason, no Baker-Nunn observations were at hand for dates after August 13. Hence, no orbits are given for these periods.

Satellite 1959 Alpha 1 (Vanguard II) Mr. Rajendra C. Nigam

A) T_o = 1959 July 8.53351 U.T.

ω = $(157^\circ.165 \pm 0^\circ.014) + (5^\circ.2667 \pm 0^\circ.0014)\,t + 7^\circ.28 \times 10^{-5} t^2$

$+ 0^\circ.14 \sin(246^\circ.51 + 5^\circ.277\,t)$

Ω = $(49^\circ.115 \pm 0^\circ.007) - (3^\circ.5051 \pm 0^\circ.0007)\,t - 4^\circ.84 \times 10^{-5} t^t$

$+ 0.012 \sin(246^\circ.51 + 5^\circ.277\,t)$

i = $(32^\circ.893 \pm 0^\circ.003) - 0^\circ.006 \sin(156^\circ.51 + 5^\circ.277\,t)$

e = $(0.16529 \pm 0.00007) - 2.3 \times 10^{-6} t$

$+ 4.24 \times 10^{-4} \sin(156^\circ.51 + 5^\circ.277\,t)$

M = $(0.86125 \pm 0.00004) + (11.456388 \pm 0.000003)\,t + 2.575 \times 10^{-5} t^2$

These elements are based on 76 Baker-Nunn observations and are valid from June 26 through July 25 with a standard error σ of $\pm 3'$.

Satellite 1959 Alpha 1 (Vanguard II) Mr. Rajendra C. Nigam

B) T_o = 1959 Aug. 8.0 U.T.

$$\omega = (317^\circ.806 \pm 0^\circ.021) + (5^\circ.2777 \pm 0^\circ.0019)t + 7.28 \times 10^{-5}t^2 + 0^\circ.14 \sin(47^\circ.28 + 5^\circ.277t)$$

$$\Omega = (302^\circ.252 \pm 0^\circ.008) - (3^\circ.508 \pm 0^\circ.001)t - 4^\circ.84 \times 10^{-5}t^2 - + 0^\circ.012 \sin(47^\circ.28 + 5^\circ.277t)$$

$$i = (32^\circ.873 \pm 0^\circ.002) - 0^\circ.006 \sin(317^\circ.28 + 5^\circ.277t)$$

$$e = (0.16519 \pm 0.00004) - 7.87 \times 10^{-6}t + 4.24 \times 10^{-4} \sin(317^\circ.28 + 5^\circ.277t)$$

$$M = (0.91798 \pm 0.00004) + (11.457586 \pm 0.000004)t + 1.633 \times 10^{-4}t^2$$

Date of demise: 2009

These elements are based on 76 Baker-Nunn observations and are valid from July 26 through August 25 with a standard error σ of $\pm 3'$.

Satellite 1959 Alpha 2 (Vanguard II Rocket) Mr. Rajendra C. Nigam

A) T_o = 1959 July 6.45723 U.T.

$$\omega = (100^\circ.654 \pm 0^\circ.006) + (4^\circ.9253 \pm 0^\circ.0010)t + 7^\circ.66 \times 10^{-5}t^2 + 0^\circ.124 \sin(190^\circ.729 + 4^\circ.94t)$$

$$\Omega = (86^\circ.880 \pm 0^\circ.005) - (3^\circ.2824 \pm 0^\circ.0006)t - 5^\circ.09 \times 10^{-5}t^2 + 0^\circ.013 \sin(190^\circ.729 + 4^\circ.94t)$$

$$i = (32^\circ.934 \pm 0^\circ.002) - 0^\circ.006 \sin(100^\circ.73 + 4^\circ.94t)$$

$$e = (0.18377 \pm 0.00006) - 8.80 \times 10^{-6}t + 4.06 \times 10^{-4} \sin(100^\circ.73 + 4^\circ.94t)$$

$$M = (0.02051 \pm 0.00001) + (11.081246 \pm 0.000003)t + 3.190 \times 10^{-5}t^2$$

These elements are based on 120 Baker-Nunn observations and are valid from June 26 through July 25 with a standard error σ of $\pm 2'$.

Satellite 1959 Alpha 2 (Vanguard II Rocket) Mr. Rajendra C. Nigam

B) T_o = 1959 Aug. 8.0 U.T.

$\omega = (261^\circ.27 \pm 0^\circ.02) + (4^\circ.9384 \pm 0^\circ.0013)t + 7^\circ.66 \times 10^{-5}t^2$

$+ 0^\circ.124 \sin(351^\circ.49 + 4^\circ.94t)$

$\Omega = (339^\circ.972 \pm 0^\circ.008) - (3^\circ.2877 \pm 0^\circ.0008)t - 5^\circ.09 \times 10^{-5}t^2$

$+ 0^\circ.013 \sin(351^\circ.49 + 4^\circ.94t)$

$i = (32^\circ.919 \pm 0^\circ.003) - 0^\circ.006 \sin(261^\circ.49 + 4^\circ.94t)$

$e = (0.18364 \pm 0.00006) - 8.80 \times 10^{-6}t$

$+ 4.06 \times 10^{-4} \sin(261^\circ.49 + 4^\circ.94t)$

$M = (0.66549 \pm 0.00003) + (11.082955 \pm 0.000002)t + 1.879 \times 10^{-5}t^2$

Date of demise: 2018

These elements are based on 105 Baker-Nunn observations and are valid from July 26 through August 25 with a standard error σ of $\pm 5'$.

Satellite 1959 Delta 2 (Explorer VI) Dr. Don A. Lautman

T_o = 1959 Aug. 11.0 U.T.

$\omega = 36^\circ.526 + 0^\circ.220t$

$\Omega = 60^\circ.503 - 0^\circ.226t$

$i = 47^\circ.161$

$q = 1.0383$

T_π = 1959 Aug. $7.60188 + 0.53169236N - 1.4584 \times 10^{-5}N^2$

Residuals in T_π in 10^{-5} days

N:	0	5	10	15	20	25	30	35	40	45	50
ΔT_π:	0	-32	- 5	5	7	0	- 4	- 4	- 2	0	0

ΔT_π = Observed T_π - Computed T_π.

OSCULATING ELEMENTS

by

Dr. Yoshihide Kozai[3]

The mean semi-major axis a is obtained from the anomalistic mean motion n, by use of the equation:

$$n^2a^3 = GM \left\{ 1 - \frac{A_2}{p^2} \left(1 - \frac{3}{2} \sin^2 i\right) \sqrt{1 - e^2} \right\} ,$$

where G is the gravitational constant, M the mass of the earth, $p = a(1 - e^2)$, and A_2 ($= 1.624 \times 10^{-3}$ square equatorial earth radii) is the coefficient of the second harmonic of earth potential. If n is in revolutions per day and a in equatorial earth radii, then GM = 290.4788.

To derive osculating from mean elements one must add the following short-periodic perturbations, where r is the geocentric radius vector and v is the true anomaly.

$$da = \frac{A_2}{a} \left[\left(1 - \frac{3}{2} \sin^2 i\right) \left\{ \frac{2}{3} \left(\frac{a}{r}\right)^3 + \frac{1}{3} (1 - e^2)^{-\frac{3}{2}} \right\} + \left(\frac{a}{r}\right)^3 \sin^2 i \cos 2(v + \omega) \right]$$

$$de = \frac{1 - e^2}{e} \frac{A_2}{a^2} \left[\frac{1}{3} \left(1 - \frac{3}{2} \sin^2 i\right) \left\{ \left(\frac{a}{r}\right)^3 - (1 - e^2)^{-\frac{3}{2}} \right\} + \frac{1}{2} \left(\frac{a}{r}\right)^3 \sin^2 i \cos 2(v + \omega) \right]$$
$$- \frac{\sin^2 i}{2e} \frac{A_2}{ap} \left\{ \cos 2(v + \omega) + e \cos (v + 2\omega) + \frac{1}{3} e \cos (3v + 2\omega) \right\}$$

$$d\omega = \frac{A_2}{p^2} \left[\left(2 - \frac{5}{2} \sin^2 i\right) (v - M + e \sin v) \right.$$
$$+ \left(1 - \frac{3}{2} \sin^2 i\right) \left\{ \frac{1}{e} \left(1 - \frac{1}{4} e^2\right) \sin v + \frac{1}{2} \sin 2v + \frac{e}{12} \sin 3v \right\}$$
$$- \frac{1}{e} \left\{ \frac{1}{4} \sin^2 i + \left(\frac{1}{2} - \frac{15}{16} \sin^2 i\right) e^2 \right\} \sin(v + 2\omega)$$
$$+ \frac{e}{16} \sin^2 i \sin (v - 2\omega) - \frac{1}{2} \left(1 - \frac{5}{2} \sin^2 i\right) \sin 2 (v + \omega)$$

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[3] Astronomer, Smithsonian Astrophysical Observatory

$$+ \frac{1}{e}\left\{ \frac{7}{12} \sin^2 i - \frac{1}{6} \left(1 - \frac{19}{8} \sin^2 i\right) e^2 \right\} \sin (3v + 2\omega)$$

$$+ \frac{3}{8} \sin^2 i \sin (4v + 2\omega) + \frac{e}{16} \sin^2 i \sin (5v + 2\omega) - \frac{3}{8} \sin^2 i \sin 2\omega \Bigg]$$

$$di = \frac{A_2}{4p^2} \sin 2i \left\{ \cos 2(v + \omega) + e \cos (v + 2\omega) + \frac{e}{3} \cos (3v + 2\omega) \right\}$$

$$d\Omega = - \frac{A_2}{p^2} \cos i \left\{ v - M + e \sin v \right.$$

$$\left. - \frac{1}{2} \sin 2(v + \omega) - \frac{e}{2} \sin (v + 2\omega) - \frac{e}{6} \sin (3v + 2\omega) \right\}$$

$$edM = \frac{A_2}{p^2} \sqrt{1 - e^2} \Bigg[-\left(1 - \frac{3}{2} \sin^2 i\right) \left\{ \left(1 - \frac{e^2}{4}\right) \sin v + \frac{e}{2} \sin 2v + \frac{e^2}{12} \sin 3v \right\}$$

$$+ \sin^2 i \left\{ \frac{1}{4} \left(1 + \frac{5}{4} e^2\right) \sin (v + 2\omega) - \frac{e^2}{16} \sin (v - 2\omega) \right.$$

$$- \frac{7}{12}\left(1 - \frac{e^2}{28}\right) \sin (3v + 2\omega) - \frac{3}{8} e \sin (4v + 2\omega)$$

$$\left. - \frac{e^2}{16} \sin (5v + 2\omega) + \frac{3}{8} e \sin 2\omega \right\} \Bigg] .$$

OBS NO	STATION	STA NO	DATE	TIME	R. A.	DECL.	AZIMUTH	ALTITUDE	RANGE	INDEX
00963	SAN FERNANDO-BN, SP.	9004	7 01	1 19 20.100	19 42 42	9 20				434013
00964	SAN FERNANDO-BN, SP.	9004	7 01	3 18 56.100	21 17 12	23 25				434013
00965	CURACAO-BN, N.W.I.	9009	7 01	4 56 58.963	19 11 18	64 05				434013
00966	ORGAN PASS-BN, N.M.	9001	7 01	8 43 12.955	19 33 48	28 05				434013
00968	SACRAMENTO, CAL.	8517	7 01	10 38 45.0			180 00	69 26		641301
00967	ORGAN PASS-BN, N.M.	9001	7 01	10 43 20.169	21 32 48	34 10				434013
00969	MAUI-BN, HAWAII	9012	7 01	12 25 48.152	19 37 18	61 27				434013
00970	MAUI-BN, HAWAII	9012	7 01	14 27 54.647	23 43 24	58 22				434013
00971	OLIFANTSFNTN-BN,S.AF	9002	7 01	17 21 55.327	13 08 24	39 53				434013
00972	JUPITER-BN, FLA.	9010	7 02	6 47 30.511	19 57 36	47 06				434013
00973	JUPITER-BN, FLA.	9010	7 02	8 49 14.652	23 14 30	48 37				434013
00974	SACRAMENTO, CAL.	8517	7 02	10 33 04.3			180 00	69 46		641301
00982	CURACAO-BN, NWI	9009	7 02	8 52 56.800	0 13 00	67 08				434013
01029	WHITTIER, CAL.	0012	7 03	8 28 38.2			180 00	77 54		845301
01024	CHINA LAKE, CAL.	0098	7 03	8 28 44.2			180 00	71 45 00		641302
00978	ALBUQUERQUE, N.M.	8534	7 03	8 32 39.3			180	81 06		845301
00985	MAUI-BN, HAWAII	9012	7 03	10 15 56.907	19 18 48	53 54				434013
00977	SACRAMENTO, CAL.	8517	7 03	10 27 17.0			180 00	69 35		641301
01030	WHITTIER, CAL.	0012	7 03	10 28 40.4			168 24	86 42		845301
01025	CHINA LAKE, CAL.	0098	7 03	10 28 41.0			180 00	80 15 00		641302
01034	ALBUQUERQUE, N.M.	8534	7 03	10 32 48.6			180	77 06		845301
00976	NAINI TAL-BN, INDIA	9006	7 04	0 24 41.280	18 12 00	39 45				434013
00981	CURACAO-BN, NWI	9009	7 04	0 39 58.098	16 02 00	-37 26				434023
01092	WHITTIER, CAL.	0012	7 04	8 22 52.7			180 00	80 54		845301
00986	FT. WORTH, TEX.	0139	7 04	8 30 01	20 49	35 00				845001
01093	WHITTIER, CAL.	0012	7 04	10 22 41.8			180 00	85 24		845301
00984	MAUI-BN, HAWAII	9012	7 04	12 10 16.592	21 33 12	63 58				434013
00983	MAUI-BN, HAWAII	9012	7 04	14 10 06.438	23 42 30	47 58				434013
01094	WHITTIER, CAL.	0012	7 05	8 17 01.5			180 00	82 30		845301
01028	ALBUQUERQUE, N.M.	0103	7 05	8 20 51			180	82 30		845302
00975	NAINI TAL-BN, INDIA	9006	7 05	15 22 10.706	16 53 24	-31 12				434023
00993	CURACAO-BN, N.W.I.	9009	7 06	0 29 22.387	15 49 30	-14 15				434013
00994	CURACAO-BN, N.W.I.	9009	7 06	2 27 16.240	14 37 42	55 09				434013
01001	MAUI-BN, HAWAII	9012	7 06	7 57 52.655	15 55 00	23 64				434013
00995	CURACAO-BN, N.W.I.	9009	7 06	8 32 10.417	1 10 30	43 48				434013
01002	MAUI-BN, HAWAII	9012	7 06	9 57 40.592	18 05 54	64 10				434013
01003	MAUI-BN, HAWAII	9012	7 06	11 57 20.312	20 23 42	65 05				434013
00997	MITAKA, JAPAN	0229	7 06	13 36 19.1			163 00	61 48		845301
00987	TOKYO-BN, JAPAN	9005	7 06	13 36 39.300	18 34 36	9 45				434013
00988	TOKYO-BN, JAPAN	9005	7 06	15 34 07.800	19 01 00	24 54				434013
00998	MITAKA, JAPAN	0229	7 06	15 35 03.7			177 12	79 54		845301
00989	TOKYO-BN, JAPAN	9005	7 06	17 33 16.500	20 38 18	16 12				434013
00999	MITAKA, JAPAN	0229	7 06	17 34 34.9			189 54	67 54		845301
00990	CURACAO-BN, N.W.I.	9009	7 07	0 24 06.727	17 02 06	5 24				434013
00991	CURACAO-BN, N.W.I.	9009	7 07	2 21 34.426	14 15 18	61 05				434013
01004	ORGAN PASS-BN, N.M.	9001	7 07	4 11 26.370	7 06 12	-16 23				434013
01008	MAUI-BN, HAWAII	9012	7 07	5 54 56.231	17 25 24	-23 59				434023
01233	SACRAMENTO, CAL.	8517	7 07	8 03 48.4			180 00	64 44		641301
01005	ORGAN PASS-BN, N.M.	9001	7 07	8 08 51.700	20 03 36	35 33				434013
00996	FT.WORTH, TEXAS	0139	7 07	8 11 57.6	20 47	31 25				845001
00992	CURACAO-BN, N.W.I.	9009	7 07	8 26 21.071	1 03 12	38 08				434013
01161	WALNUT CREEK, CAL.	8553	7 07	10 03 08.5	20 52 00	14 06				641001
01234	SACRAMENTO, CAL.	8517	7 07	10 03 19.1			180 00	63 35		641301
01006	ORGAN PASS-BN, N.M.	9001	7 07	10 08 08.060	21 25 30	17 23				434013
01007	TOKYO-BN, JAPAN	9005	7 07	13 30 15.600	18 10 12	11 24				434013
01009	MAUI-BN, HAWAII	9012	7 07	11 51 51.843	21 10 24	63 21				434013
01016	SAN FERNANDO-BN, SP.	9004	7 07	22 39 15.100	17 24 24	- 0 16				434013
01033	CURACAO-BN, N.W.I.	9009	7 08	0 16 58.551	13 19 30	- 0 43				434013
01017	SAN FERNANDO-BN, SP.	9004	7 08	0 37 52.600	19 03 36	21 57				434013
01018	SAN FERNANDO-BN, SP.	9004	7 08	2 36 44.900	20 33 36	13 54				434013
01010	FT.WORTH, TEXAS	0139	7 08	6 06 22.6	18 40	33 40				845001
01111	DALLAS, TEXAS	0129	7 08	6 06 38	18 48 06	33 18				845001
01011	WALNUT CREEK, CAL.	8535	7 08	7 55 59.3	19 10 30	16 12				845001
01012	SACRAMENTO, CAL.	8517	7 08	7 57 39.9			180 00	65 17		641301
01013	SACRAMENTO, CAL.	8517	7 08	9 57 05.7			180 00	60 53		641301
01014	ORGAN PASS-BN,N.M.	9008	7 08	10 02 16.500	21 35 42	11 47				434013
01022	MAUI-BN, HAWAII	9012	7 08	11 45 39.772	21 08 54	62 12				434013
01019	NAINI TAL-BN, INDIA	9006	7 08	17 03 47.218	18 39 12	36 58				434013
01020	NAINI TAL-BN, INDIA	9006	7 08	18 59 13.796	16 37 12	41 36				434013
01021	NAINI TAL-BN, INDIA	9006	7 08	21 00 59.709	21 04 18	28 03				434013
01015	SAN FERNANDO-BN, SP.	9004	7 08	22 33 54.500	18 00 36	5 53				434013
01060	SHIRAZ-BN, IRAN	9008	7 08	22 50 50.324	20 25 24	28 27				434013
01061	SHIRAZ-BN, IRAN	9008	7 08	22 52 31.374	21 39 12	23 21				434013
01042	CURACAO-BN, N.W.I.	9009	7 09	0 11 00.702	12 30 12	13 13				434013
01031	SACRAMENTO, CAL.	8517	7 09	5 52 43.4			180 00	41 32		641301
01023	FT WORTH, TEXAS	0139	7 09	6 00 04.6	18 34	34 55				845001
01043	CURACAO-BN, N.W.I.	9009	7 09	6 11 28.554	23 02 00	65 20				434013
01045	MAUI-BN, HAWAII	9012	7 09	7 40 21.671	15 14 48	52 32				434013
01162	WALNUT CREEK, CAL.	8535	7 09	7 51 17.8	18 46 45	16 12				845001

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01032	SACRAMENTO, CAL.	8517	7 09	7 51 25.9			180 00	65 38		641301
01163	WALNUT CREEK, CAL.	8535	7 09	7 51 34.6	19 02 15	16 20				845001
01044	CURACAO-BN, N.W.I.	9009	7 09	8 11 56.255	23 27 42	38 23				434013
01046	MAUI-BN, HAWAII	9012	7 09	9 38 40.924	14 24 18	69 28				434013
01110	STOCKTON, CAL.	8549	7 09	9 51 02.5	20 53	7 24				845001
01112	ALBUQUERQUE, N.M.	0103	7 09	9 56 37.2			180	54 18		845302
01047	MAUI-BN, HAWAII	9012	7 09	11 39 52.443	21 38 24	58 31				434013
01471	MAUI-BN, HAWAII	9012	7 09	13 39 05.534	21 55 30	30 04				434013
01085	SHIRAZ-BN, IRAN	9008	7 09	16 48 44.380	15 35 42	-17 27				434013
01086	SHIRAZ-BN, IRAN	9008	7 09	16 50 08.550	17 13 12	- 5 20				434013
01040	NAINI TAL-BN, INDIA	9006	7 09	18 56 42.070	20 42 36	43 12				434013
01041	CURACAO-BN, N.W.I.	9009	7 10	0 05 30.443	12 32 36	36 35				434013
01217	SAN FERNANDO-BN, SP.	9004	7 10	0 25 23.400	19 01 48	21 12				434013
01048	JUPITER-BN, FLA.	9010	7 10	2 02 01.631	15 56 36	14 40				434013
01038	ST.LOUIS, MO.	0140	7 10	3 57 56	17 34 48	- 0 57				845001
01039	SAN JOSE, CAL.	0134	7 10	5 46 37.4			180	48 36		845301
01235	SACRAMENTO, CAL.	8517	7 10	5 46 38.2			180 00	44 23		641301
01052	ORGAN PASS-BN, N.M.	9001	7 10	5 51 53.200	17 35 36	33 30				434013
01072	MAUI-BN, HAWAII	9012	7 10	7 34 20.182	15 01 18	60 00				434013
01164	WALNUT CREEK, CAL.	8535	7 10	7 46 19.7	19 55	15 24				845001
01037	FT.WORTH, TEXAS	0139	7 10	7 53 03.6	20 34	23 05				845001
01049	CURACAO-BN, NWI	9009	7 10	8 05 49.873	23 23 18	31 12				434013
01073	MAUI-BN, HAWAII	9012	7 10	9 32 57.086	17 25 36	72 50				434013
01053	ORGAN PASS-BN, N.M.	9001	7 10	9 48 01.100	20 26 18	7 22				434013
01074	MAUI-BN, HAWAII	9012	7 10	11 34 04.340	22 04 42	53 34				434013
01058	NAINI TAL-BN, INDIA	9006	7 10	16 51 17.230	18 42 18	44 18				434013
01097	SHIRAZ-BN, IRAN	9008	7 10	22 39 10.405	21 03 54	15 32				434013
01098	SHIRAZ-BN, IRAN	9008	7 10	22 40 22.382	21 49 36	10 50				434013
01063	CURACAO-BN, N.W.I.	9009	7 10	23 59 48.576	12 28 18	54 23				434013
01057	SAN FERNANDO-BN, SP.	9004	7 11	0 19 07.000	19 06 48	19 47				434013
01064	JUPITER-BN, FLA.	9010	7 11	1 55 39.877	15 37 30	22 30				434013
01075	ALAMOGORDO, N.M.	0102	7 11	3 46 40			180	53 24		845302
01054	ORGAN PASS-BN, N.M.	9001	7 11	3 47 04.700	16 33 00	1 07				434013
01065	JUPITER-BN, FLA.	9010	7 11	3 53 21.277	16 31 00	56 30				434013
01114	CINCINNATI, OHIO	0050	7 11	3 54 45	19 21 09	7 36				845001
01050	SACRAMENTO, CAL.	8517	7 11	5 40 23.9			180 00	46 46		641301
01055	ORGAN PASS-BN, N.M.	9001	7 11	5 44 43.800	17 47 18	35 55				434013
01066	JUPITER-BN, FLA.	9010	7 11	5 53 03.257	20 01 30	47 33				434013
01069	MAUI-BN, HAWAII	9012	7 11	7 27 45.520	13 49 06	-62 01				434023
01156	WALNUT CREEK, CAL.	8535	7 11	7 38 31.5	18 40 45	14 57				845001
01051	SACRAMENTO, CAL.	8517	7 11	7 38 40.3			180 00	64 05		641301
01157	WALNUT CREEK, CAL.	8535	7 11	7 38 59.8	19 06 45	14 45				845001
01056	ORGAN PASS-BN, N.M.	9001	7 11	7 43 24.100	19 44 48	28 08				434013
01115	CINCINNATI, OHIO	0050	7 11	7 50 08	20 47 51	- 7 24				845001
01067	JUPITER-BN, FLA.	9010	7 11	7 52 39.544	21 18 18	12 29				434013
01070	MAUI-BN, HAWAII	9012	7 11	9 27 07.983	18 50 12	74 01				434013
01109	WHITTIER, CAL.	0012	7 11	9 39 28.6			180 00	61 42		845301
01068	V. DOLORES-BN, ARG.	9011	7 11	10 09 53.898	3 18 12	25 45				434013
01071	MAUI-BN, HAWAII	9012	7 11	13 27 25.170	22 20 12	11 34				434013
01105	SHIRAZ-BN, IRAN	9008	7 11	18 34 59.300	17 51 54	47 19				434013
01104	SHIRAZ-BN, IRAN	9008	7 11	18 35 24.800	18 33 06	46 48				434013
01062	CURACAO-BN, N.W.I.	9009	7 11	23 54 04.595	12 40 48	68 30				434013
01165	SACRAMENTO, CAL.	8517	7 12	5 34 03.0			180 00	48 50		641301
01080	SAN JOSE, CAL.	0134	7 12	5 36 42.8			180	56 06		845301
01113	ALBUQUERQUE, N.M.	0103	7 12	5 38 16.4			180	79 18		845302
01158	WALNUT CREEK, CAL.	8535	7 12	7 32 03.6	18 41 45	13 24				845001
01166	SACRAMENTO, CAL.	8517	7 12	7 32 08.1			180 00	62 08		641301
01059	NAINI TAL-BN, INDIA	9006	7 12	16 38 11.146	18 07 42	50 33				434013
01122	SHIRAZ-BN, IRAN	9008	7 12	22 24 43.091	19 59 12	9 15				434013
01220	WHITTIER, CAL.	0012	7 12	9 36 01.3			148 42	42 18		845301
01082	AREQUIPA-BN, PERU	9007	7 12	23 25 21.053	12 23 48	22 56				434013
01079	FT.WORTH, TEXAS	0139	7 13	3 36 26.4	16 30	25 10				845001
01167	DALLAS, TEXAS	0129	7 13	3 36 38.8	16 36	24 30				845001
01168	DALLAS, TEXAS	0129	7 13	3 36 40.5	16 38 30	24 45				845001
01077	ST.LOUIS, MO.	0140	7 13	3 38 26	17 07 30	2 30				845001
01159	ST. LOUIS, MO.	0140	7 13	3 38 34	17 17 18	2 36				845001
01160	ST. LOUIS, MO.	0140	7 13	3 38 36	17 19 48	2 42				845001
01078	CINCINNATI, OHIO	8555	7 13	3 39 49.3	17 16 55	4 25				845001
01076	FT.WORTH, TEXAS	0139	7 13	5 34 17.6	18 27	34 48				845001
01081	WALNUT CREEK, CAL.	8535	7 13	7 26 01.7	19 12 20	10 27				845001
01099	CURACAO-BN, N.W.I.	9009	7 13	7 45 57.440	22 37 00	11 07				434013
01091	NAINI TAL-BN, INDIA	9006	7 13	18 28 09.725	17 40 36	41 35				434013
01090	SAN FERNANDO-BN, SP.	9004	7 13	22 00 53.400	16 27 30	12 45				434013
01096	JUPITER-BN, FLA.	9010	7 14	1 36 48.511	15 27 00	51 34				434013
01174	ORGAN PASS-BN, N.M.	9001	7 14	3 27 48.00	16 19 30	18 00				434013
01169	DALLAS, TEXAS	0129	7 14	3 30 04.6	16 33 45	28 40 12				845001
01230	ST LOUIS, MO.	0140	7 14	3 31 43.5	16 50 00	3 06				845001
01231	ST LOUIS, MO.	0140	7 14	3 32 00	17 14 18	3 39				845001
01087	ST. LOUIS, MO.	0140	7 14	3 32 03.5	17 23 42	3 42				845001
01232	ST LOUIS, MO.	0140	7 14	3 32 04	17 25 06	3 42				845001
01095	JUPITER-BN, FLA.	9010	7 14	3 34 44.278	18 20 00	62 20				434013
01175	ORGAN PASS-BN, N.M.	9001	7 14	5 20 52.900	18 07 54	37 40				434013
01088	SAN JOSE, CAL.	0134	7 14	5 23 40.8			180	59 06		845301
01089	FT.WORTH, TEXAS	0139	7 14	5 27 33	18 19	32 55				845001
01221	WALNUT CREEK, CAL.	8535	7 14	7 18 42.8	18 45 30	8 20				845001
01103	AREQUIPA-BN, PERU	9007	7 14	7 45 13.479	1 19 06	33 14				434013
01101	WOOMERA-BN, AUSTR.	9003	7 14	18 54 48.549	2 09 24	25 44				434013
01102	SAN FERNANDO-BN, SP.	9004	7 14	21 54 51.900	17 24 00	14 44				434013

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01106	JUPITER-BN, FLA.	9010	7 15	1 30 38.796	16 37 54	59 35				434013
01100	OLIFANTSFNTN-BN,S.AF	9002	7 15	2 14 45.6	1 44 48	22 56				434013
01107	JUPITER-BN, FLA.	9010	7 15	3 27 47.369	17 53 00	63 29				434013
01108	CINCINNATI, OHIO	8555	7 15	3 28 14	19 11 40	3 40				845001
01121	CURACAO-BN, NWI	9009	7 15	7 32 33.204	22 18 12	- 6 16				434013
01120	AREQUIPA-BN, PERU	9007	7 15	9 35 32.617	0 08 30	5 22				434013
01119	NAINI TAL-BN, INDIA	9006	7 15	16 17 38.453	17 04 42	56 49				434013
01118	OLIFANTSFNTN-BN,S.AF	9002	7 16	2 06 37.8	1 15 18	21 49				434013
01129	ALAMOGORDO, N.M.	0102	7 16	3 14 16			180	81 30		845302
01116	ORGAN PASS-BN, N.M.	9001	7 16	3 14 48.150	17 05 42	29 38				434013
01117	ORGAN PASS-BN, N.M.	9001	7 16	5 11 12.120	17 19 12	36 10				434013
01124	AREQUIPA-BN, PERU	9007	7 16	7 29 57.669	1 30 42	31 13				434013
01125	WOOMERA-BN, AUSTR.	9003	7 16	18 41 48.585	2 20 06	14 55				434013
01126	WOOMERA-BN, AUSTR.	9003	7 16	20 38 52.614	2 24 18	- 5 09				434013
01127	SAN FERNANDO-BN, SP.	9004	7 16	21 40 44.300	16 50 06	13 02				434013
01128	JUPITER-BN, FLA.	9010	7 17	1 16 57.826	17 23 00	69 30				434013
01131	SACRAMENTO, CAL.	8517	7 17	5 00 25.4			180 00	51 14		641301
01130	AREQUIPA-BN, PERU	9007	7 17	7 23 51.465	0 46 24	21 52				434013
01134	WOOMERA-BN, AUSTR.	9003	7 17	18 31 22.240	1 02 48	21 36				434013
01135	WOOMERA-BN, AUSTR.	9003	7 17	20 31 17.054	2 09 24	- 9 25				434013
01142	VAN NUYS, CAL.	0113	7 18	4 54 09			172	80 30		845301
01170	ALBUQUERQUE HIGH,N.M	8534	7 18	4 57 09.7	17 34 24	13 06				845001
01171	ALBUQUERQUE HIGH,N.M	8534	7 18	4 57 29.4	18 03 24	12 00				845001
01139	AREQUIPA-BN, PERU	9007	7 18	7 18 52.468	1 29 24	6 26				434013
01140	AREQUIPA-BN, PERU	9007	7 18	9 14 24.076	23 52 24	-19 07				434013
01138	NAINI TAL-BN, INDIA	9006	7 18	15 56 54.629	18 23 42	52 35				434013
01137	SAN FERNANDO-BN, SP.	9004	7 18	21 26 29.700	16 59 42	8 08				434013
01132	OLIFANTSFNTN-BN,S.AF	9002	7 19	1 43 44.0	0 22 36	11 36				434013
01133	OLIFANTSFNTN-BN,S.AF	9002	7 19	3 43 55.6	1 18 24	-29 31				434023
01218	SACRAMENTO, CAL.	8517	7 19	4 46 01.5			180 00	47 17		641301
01236	VAN NUYS, CAL.	0113	7 19	4 46 49			180	79 45		845301
01141	AREQUIPA-BN, PERU	9007	7 19	9 06 28.862	23 29 30	-23 47				434023
01136	WOOMERA-BN, AUSTR.	9003	7 19	20 15 51.349	1 50 18	-18 04				434013
01144	SAN FERNANDO-BN, SP.	9004	7 19	21 18 54.000	16 26 18	4 47				434013
01143	OLIFANTSFNTN-BN,S.AF	9002	7 20	3 35 47.8	0 54 00	-32 33				434023
01222	VAN NUYS, CAL.	0113	7 20	4 39 25			180	75 45 00		845301
01229	ALBUQUERQUE, N.M.	8534	7 20	4 42 28.8	17 29 00	1 40				845001
01146	ALBUQUERQUE, N.M.	8534	7 20	4 42 42.2	17 49 48	1 12				845001
01145	AREQUIPA-BN, PERU	9007	7 20	8 58 41.689	23 15 06	-29 34				434023
01147	WOOMERA-BN, AUSTR.	9003	7 20	18 08 43.090	0 47 54	8 59				434013
01244	SAN FERNANDO-BN, SP.	9004	7 20	21 11 23.200	16 18 00	0 20				434013
01148	OLIFANTSFNTN-BN,S.AF	9002	7 21	1 28 40.3	0 17 00	- 0 14				434013
01149	OLIFANTSFNTN-BN,S.AF	9002	7 21	3 28 12.5	1 01 12	-37 39				434023
01219	SACRAMENTO, CAL.	8517	7 21	4 31 07.6			180 00	40 56		641301
01151	VAN NUYS, CAL.	0113	7 21	4 31 54			180	71		845301
01152	AREQUIPA-BN, PERU	9007	7 21	8 52 17.304	0 29 24	-34 47				434023
01154	WOOMERA-BN, AUSTR.	9003	7 21	20 00 16.930	1 52 36	-26 13				434023
01155	FORT WORTH, TEXAS	0139	7 22	2 32 35	16 00	32 10				845001
01176	OLIFANTSFNTN-BN,S.AF	9002	7 22	3 21 11.7	0 09 30	-37 34				434023
01223	VAN NUYS, CAL.	0113	7 22	4 24 18			180	64 45 00		845301
01172	WHITTIER, CAL.	8566	7 22	4 24 25.4			180 00	66 36		845301
01153	ORGAN PASS-BN, N.M.	9001	7 22	4 26 24.200	16 56 42	5 20				434013
01173	VILLA DOLORES-BN,ARG	9011	7 22	8 48 16.921	1 11 18	-17 04				434013
01180	WOOMERA-BN, AUSTR.	9003	7 22	17 53 19.756	0 52 24	- 1 10				434013
01179	WOOMERA-BN, AUSTR.	9003	7 22	19 50 32.389	0 39 30	-25 37				434023
01177	OLIFANTSFNTN-BN,S.AF	9002	7 23	1 15 09.7	1 26 42	-18 57				434013
01178	OLIFANTSFNTN-BN,S.AF	9002	7 23	3 10 32.9	23 41 00	-39 00				434023
01224	VAN NUYS, CAL.	0113	7 23	4 16 36			180	57 45 00		845301
01225	VAN NUYS, CAL.	0113	7 23	4 16 43.5	16 39 18	1 03				845001
01182	WOOMERA-BN, AUSTR.	9003	7 23	19 41 41.436	0 08 36	-27 00				434023
01183	SAN FERNANDO-BN, SP.	9004	7 23	20 48 07.500	15 35 30	-15 07				434013
01181	OLIFANTSFNTN-BN,S.AF	9002	7 24	3 01 28.5	23 00 12	-38 36				434023
01226	VAN NUYS, CAL.	0113	7 24	4 08 49			180	50		845301
01227	VAN NUYS, CAL.	0113	7 24	4 09 38.9	17 56 12	- 9 48				845001
01267	ORGAN PASS-BN, N.M.	9001	7 24	4 10 15.630	15 56 42	- 6 40				434013
01184	VILLA DOL.-BN., ARG.	9011	7 24	8 29 54.775	23 47 00	-18 48				434013
01186	WOOMERA-BN., AUSTR.	9003	7 24	19 32 33.885	23 31 18	-27 29				434023
01228	VAN NUYS, CAL.	0113	7 25	4 00 57			180	42 15 00		845301
01188	VILLA DOL.-BN., ARG.	9011	7 25	8 20 55.629	23 17 24	-20 19				434013
01187	SANFERNANDO-BN., SP.	9004	7 25	20 32 16.300	15 19 48	-25 36				434023
01189	BILOXI, MISS.	0090	7 26	2 03 21			180	60 30		845301
01185	ORGAN PASS-BN., N.M.	9001	7 26	3 55 31.700	15 55 54	-25 26				434023
01208	AREQUIPA-BN., PERU	9007	7 27	10 02 59.260	2 19 06	-70 54				434023
01209	OLIFNTSFNTN-BN, S.AF	9002	7 29	2 18 42.2	22 38 00	-37 52				434023
01215	AREQUIPA-BN, PERU	9007	7 29	9 44 52.575	1 18 30	-70 49				434023
01211	WOOMERA-BN, AUSTR.	9003	7 29	18 49 52.809	23 37 48	-39 17				434023
01212	WOOMERA-BN, AUSTR.	9003	7 29	18 54 29.086	3 11 48	-33 51				434023
01213	WOOMERA-BN, AUSTR.	9003	7 29	20 41 01.451	21 07 24	-22 29				434013
01214	WOOMERA-BN, AUSTR.	9003	7 29	20 50 57.867	2 38 12	-29 15				434023
01216	JUPITER-BN, FLA.	9010	7 30	1 31 50.502	13 58 30	-27 05				434023

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01210	OLIFNTSFNTN-BN, S.AF	9002	7 30	2 11 57.7	0 40 54	-54 50				434023
01243	VILLA DOL.-BN, ARG.	9011	7 30	7 40 12.993	1 04 42	-35 47				434023
01242	AREQUIPA-BN, PERU	9007	7 30	9 36 05.934	1 32 36	-70 11				434023
01241	WOOMERA-BN, AUSTR.	9003	7 30	18 41 10.646	23 48 42	-40 26				434023
01238	WOOMERA-BN, AUSTR.	9003	7 30	20 33 03.450	21 22 36	-24 19				434023
01239	WOOMERA-BN, AUSTR.	9003	7 30	20 41 11.128	1 59 06	-28 21				434023
01240	WOOMERA-BN, AUSTR.	9003	7 30	20 43 32.158	3 32 06	-20 52				434013
01258	MAUI-BN, HAWAII	9012	7 31	6 55 16.643	13 15 06	-19 08				434013
01254	VILLA DOL.-BN, ARG.	9011	7 31	7 33 20.374	2 37 48	-31 50				434023
01245	AREQUIPA-BN, PERU	9007	7 31	9 25 25.818	23 11 36	-69 11				434023
01255	VILLA DOL.-BN, ARG.	9011	7 31	9 29 52.100	2 15 12	-28 26				434023
01250	WOOMERA-BN, AUSTR.	9003	7 31	20 31 52.230	1 44 42	-25 55				434023
01247	OLIFNTSFNTN-BN, S.AF	9002	8 01	1 53 17.3	23 59 36	-55 21				434023
01248	OLIFNTSFNTN-BN, S.AF	9002	8 01	3 53 28.1	2 10 42	-36 08				434023
01252	AREQUIPA-BN, PERU	9007	8 01	9 18 40.258	6 22 42	-66 47				434023
01256	VILLA DOL.-BN, ARG.	9011	8 01	9 19 53.140	1 30 30	-28 13				434023
01251	WOOMERA-BN, AUSTR.	9003	8 01	20 22 42.667	1 38 42	-22 36				434013
01249	OLIFNTSFNTN-BN, S.AF	9002	8 02	3 43 46.6	1 43 12	-33 55				434023
01253	AREQUIPA-BN, PERU	9007	8 02	9 09 45.456	2 36 06	-64 23				434023
01257	VILLA DOL.-BN, ARG.	9011	8 02	9 10 29.548	1 35 54	-24 35				434023
01246	OLIFNTSFNTN-BN, S.AF	9002	8 03	1 37 26.7	2 25 24	-46 10				434023
01264	OLIFNTSFNTN-BN, S.AF	9002	8 03	3 34 20.200	1 30 18	-30 22				434023
01261	AREQUIPA-BN, PERU	9007	8 03	9 59 13.894	1 09 42	-66 40				434023
01260	WOOMERA-BN, AUSTR.	9003	8 03	18 08 00.348	2 28 48	-28 47				434023
01259	WOOMERA-BN, AUSTR.	9003	8 03	20 00 10.062	22 58 00	-22 43				434013
01265	OLIFNTSFNTN-BN, S.AF	9002	8 04	3 25 53.800	2 02 00	-22 32				434013
01262	VILLA DOL.-BN, ARG.	9011	8 04	8 51 04.257	0 37 18	-21 10				434013
01263	AREQUIPA-BN, PERU	9007	8 04	8 51 09.562	2 28 24	-60 33				434023
01266	WOOMERA-BN, AUSTR.	9003	8 04	19 54 22.795	1 10 12	-11 42				434013
01268	AREQUIPA-BN, PERU	9007	8 05	8 40 52.941	1 35 06	-62 09				434023
01269	WOOMERA-BN, AUSTR.	9003	8 05	19 40 10.872	22 13 24	-18 00				434013
01270	WOOMERA-BN, AUSTR.	9003	8 05	19 45 00.099	1 08 24	- 6 48				434013
01271	OLIFNTSFNTN-BN, S.AF	9002	8 06	3 05 57.2	1 32 48	-35 03				434023
01272	AREQUIPA-BN, PERU	9007	8 06	8 31 37.794	1 45 36	-58 43				434023
01274	WOOMERA-BN, AUSTR.	9003	8 06	19 38 01.700	2 25 18	7 00				434013
01273	OLIFNTSFNTN-BN, S.AF	9002	8 07	2 57 16.293	1 35 12	- 7 21				434013
01275	AREQUIPA-BN, PERU	9007	8 07	10 21 09.390	1 33 48	-15 31				434013
01278	WOOMERA-BN, AUSTR.	9003	8 07	19 25 40.357	0 51 30	2 12				434013
01283	AREQUIPA-BN, PERU	9007	8 08	8 14 04.721	2 48 30	-42 15				434023
01284	AREQUIPA-BN, PERU	9007	8 08	10 11 50.081	1 41 36	- 6 39				434013
01279	WOOMERA-BN, AUSTR.	9003	8 08	19 13 51.917	23 31 54	- 0 25				434013
01280	WOOMERA-BN, AUSTR.	9003	8 08	19 15 16.201	0 21 30	4 35				434013
01281	WOOMERA-BN, AUSTR.	9003	8 08	19 18 00.176	1 49 42	14 03				434013
01276	OLIFNTSFNTN-BN, S.AF	9002	8 09	2 36 40.900	1 37 48	- 1 11				434013
01285	AREQUIPA-BN, PERU	9007	8 09	8 04 11.900	2 35 18	-38 52				434023
01286	AREQUIPA-BN, PERU	9007	8 09	10 02 03.300	1 32 24	0 01				434013
01282	WOOMERA-BN, AUSTR.	9003	8 09	19 04 59.907	23 58 24	7 42				434013
01277	OLIFNTSFNTN-BN, S.AF	9002	8 10	2 25 37.400	23 45 36	- 0 54				434013
01287	WOOMERA-BN, AUSTR.	9003	8 10	18 57 00.956	0 53 24	19 02				434013
01288	AREQUIPA-BN, PERU	9007	8 11	9 42 05.701	1 07 00	12 07				434013
01290	AREQUIPA-BN, PERU	9007	8 11	23 41 46.629	17 41 00	3 25				434013
01289	OLIFANTSFNTN-BN,S.AF	9002	8 12	2 06 51.851	0 09 30	15 12				434013
01291	AREQUIPA-BN, PERU	9007	8 12	9 31 48.100	0 51 42	17 28				434013
01328	OLIFNTSFNTN-BN, S.AF	9002	8 13	1 58 41.000	0 58 12	27 20				434013
01292	CURACAO-BN, N.W.I.	9009	8 13	9 28 24.818	3 38 06	-18 30				434013
01293	AREQUIPA-BN, PERU	9007	8 15	8 59 57.819	23 31 06	26 42				434013
01294	AREQUIPA-BN, PERU	9007	8 16	8 51 09.150	0 06 48	38 30				434013
01327	MAUI-BN, HAWAII	9012	8 16	14 27 30.536	3 43 00	-18 53				434013
01355	AREQUIPA-BN, PERU	9007	8 17	8 40 11.014	0 20 00	-25 00				434023
01356	CURACAO-BN, N.W.I.	9009	8 17	8 45 56.950	2 25 06	- 0 30				434013
01358	WOOMERA-BN, AUSTR.	9003	8 18	9 46 16.691	17 41 42	- 5 19				434013
01295	OLIFANTSFNTN-BN,S.AF	9002	8 18	17 05 45.500	12 11 18	-56 51				434023
01296	OLIFNTSFNTN-BN, S.AF	9002	8 19	16 56 21.600	21 16 00	-80 24				434023
01297	MAUI-BN, HAWAII	9012	8 20	13 43 19.689	2 22 06	- 9 32				434013
01298	OLIFANTSFNTN-BN,S.AF	9002	8 20	16 45 27.600	11 37 00	-80 36				434023
01303	PERTH, AUS.	0601	8 21	11 06 18.1			180 00	81 35		641301
01304	PERTH, AUS.	0601	8 21	11 06 35.7			117 00	67 15		641301
01300	MAUI-BN, HAWAII	9012	8 21	13 31 50.385	1 49 12	- 9 19				434013
01299	OLIFNTSFNTN-BN, S.AF	9002	8 21	16 34 59.700	10 40 00	-83 02				434023
01416	PERTH, AUS.	0601	8 22	10 55 45.0			180 00	76 40		641301
01305	PERTH, AUS.	0601	8 22	10 55 57.1			132 40	67 30		641301

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01301	MAUI-BN, HAWAII	9012	8 22	13 21 33.596	2 05 48	0 16				434013
01376	CINCINNATI, OHIO	0050	8 23	9 38 45	3 39 54	- 5 50 24				845001
01302	MAUI-BN, HAWAII	9012	8 23	15 08 27.147	1 34 48	47 41				434013
01359	SAN FERNANDO-BN, SP.	9004	8 24	3 54 48.800	2 36 36	- 9 39				434013
01306	MAUI-BN, HAWAII	9012	8 24	14 57 03.276	1 14 48	51 30				434013
01377	CINCINNATI, OHIO	0050	8 26	9 02 00	1 39 24	-10 18				845001
01307	JUPITER-BN, FLA.	9010	8 26	9 03 54.799	2 18 24	35 31				434013
01357	ORGAN PASS-BN, N.M.	9001	8 26	10 54 19.200	2 24 36	17 46				434013
01310	MAUI-BN, HAWAII	9012	8 26	14 35 31.472	2 21 42	61 03				434013
01308	NAINI TAL-BN, INDIA	9006	8 26	21 51 59.765	2 45 30	22 34				434013
01309	JUPITER-BN, FLA.	9010	8 27	8 51 40.214	1 21 18	36 11				434013
01313	MAUI-BN, HAWAII	9012	8 27	14 22 44.735	0 28 00	59 24				434013
01312	MITAKA, JAPAN	0229	8 27	18 01 31.8			163 00	60 12		845301
01311	TOKYO-BN, JAPAN	9005	8 27	18 01 55.400	2 28 06	7 50				434013
01410	WOOMERA-BN, AUSTR.	9003	8 28	9 54 08.791	14 31 30	-24 14				434023
01314	ORGAN PASS-BN, N.M.	9001	8 28	10 30 32.100	1 27 00	20 20				434013
01316	MAUI-BN, HAWAII	9012	8 28	14 11 56.297	1 20 54	65 28				434013
01318	NAINI TAL-BN, INDIA	9006	8 28	21 28 22.713	2 00 12	27 36				434013
01319	JUPITER-BN, FLA.	9010	8 29	8 28 39.223	1 07 30	44 04				434013
01378	ALBUQUERQUE, N.M.	8534	8 30	10 07 27.4	1 29 12	14 48				845001
01379	ALBUQUERQUE, N.M.	8534	8 30	10 07 37.5	1 37 48	15 18				845001
01317	ORGAN PASS-BN, N.M.	9001	8 30	10 11 37.500	1 50 06	15 48				434013
01380	ALBUQUERQUE, N.M.	8534	8 31	9 55 44.9	1 25 00	16 42				845001
01381	ALBUQUERQUE, N.M.	8534	8 31	9 56 05.6	1 48 48	17 48				845001
01320	OLIFANTSFNTN-BN,S.AF	9002	8 31	16 43 02.000	12 19 00	-70 18				434023

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OBS NO	STATION	STA NO	DATE	TIME	R. A.	DECL.	AZIMUTH	ALTITUDE	RANGE	INDEX
00541	MAUI-BN, HAWAII	9012	5 02	5 43 30.806	8 32 06	21 16				434013
01515	SHIRAZ-BN, IRAN	9008	5 02	16 54 56.288	12 11 48	-13 21				434013
01516	SHIRAZ-BN, IRAN	9008	5 02	16 57 51.155	13 28 48	- 3 13				434013
01517	SHIRAZ-BN, IRAN	9008	5 02	18 55 51.085	13 16 36	22 00				434013
00534	NAINI TAL-BN, INDIA	9006	5 02	21 05 17.289	18 15 12	39 33				434013
00577	SAN FERNANDO-BN, SP.	9004	5 02	22 36 13.129	12 54 06	1 29				434013
00578	SAN FERNANDO-BN, SP.	9004	5 03	0 40 58.930	17 35 12	19 06				434013
00579	SAN FERNANDO-BN, SP.	9004	5 03	2 36 42.771	16 29 24	15 19				434013
01518	SHIRAZ-BN, IRAN	9008	5 03	16 56 15.691	11 42 48	-10 12				434013
01519	SHIRAZ-BN, IRAN	9008	5 03	16 58 36.934	12 50 18	- 1 26				434013
00555	MAUI-BN, HAWAII	9012	5 04	9 48 02.034	13 10 00	61 50				434013
01190	BRATISLAVA, CZECH.	8126	5 05	22 50 54.4	14 58 30	- 2 24				834009
01191	BRATISLAVA, CZECH.	8126	5 05	22 51 02.7	15 04 54	- 2 24				834009
00580	SACRAMENTO-E, CAL.	8517	5 06	6 04 14.2			180 00	60 26		641301
00700	NAINI TAL-BN, INDIA	9006	5 06	15 11 27.358	11 43 42	13 23				434013
00596	TOKYO-BN, JAPAN	9005	5 07	13 32 59.425	13 00 18	25 41				434013
00615	MITAKA, JAPAN	0229	5 07	13 34 37.0			175 54	80 24		845301
01192	BRATISLAVA, CZECH.	8126	5 07	20 53 34.3	12 57 36	- 2 48				834009
01193	BRATISLAVA, CZECH.	8126	5 07	20 55 10.2	13 51 42	- 2 06				834009
00630	JUPITER-BN, FLA.	9010	5 08	2 21 32.827	13 31 00	51 17				434013
01194	BRATISLAVA, CZECH.	8126	5 08	20 54 56.4	13 10 00	- 1 36				834009
01195	BRATISLAVA, CZECH.	8126	5 08	20 56 26.1	13 52 12	- 1 00				834009
01196	BRATISLAVA, CZECH.	8126	5 08	20 57 29.2	14 22 06	- 0 54				834009
01197	BRATISLAVA, CZECH.	8126	5 10	20 58	13 26 24	- 0 48				834009
01198	BRATISLAVA, CZECH.	8126	5 10	20 58 59.0	13 52 06	- 1 00				834009
01199	BRATISLAVA, CZECH.	8126	5 10	21 00 20.6	14 38 18	- 1 48				834009
00650	ORGAN PASS-BN, N.M.	9001	5 11	4 16 41.494	12 09 42	34 38				434013
00652	AREQUIPA-BN, PERU	9007	5 11	8 35 19.828	21 17 36	38 54				434013
00665	SAN FERNANDO-BN, SP.	9004	5 11	22 51 13.428	18 48 30	22 11				434013
01200	BRATISLAVA, CZECH.	8126	5 12	20 59 32.6	13 28 00	- 2 42				834009
01201	BRATISLAVA, CZECH.	8126	5 12	21 00 21.6	13 50 48	- 3 12				834009
01362	BRATISLAVA, CZECH.	2701	5 12	21 01 14.1	14 14 36	- 3 57				834040
01202	BRATISLAVA, CZECH.	8126	5 12	21 03 48.4	15 18 54	- 6 42				834009
01203	BRATISLAVA, CZECH.	8126	5 13	20 59 59.8	13 22 12	- 4 06				834009
01204	BRATISLAVA, CZECH.	8126	5 13	21 00 47.5	13 41 12	- 4 48				834009
01363	BRATISLAVA, CZECH.	2701	5 13	21 01 28.9	14 02 00	- 5 35				834040
01205	BRATISLAVA, CZECH.	8126	5 13	21 01 40.2	14 09 06	- 5 54				834009
01364	BRATISLAVA, CZECH.	2701	5 13	21 02 06.3	14 18 30	- 6 15				834040
01365	BRATISLAVA, CZECH.	2701	5 13	21 02 47.0	14 35 42	- 6 57				834040
01206	BRATISLAVA, CZECH.	8126	5 13	21 03 11.4	14 43 12	- 7 30				834009
01207	BRATISLAVA, CZECH.	8126	5 13	21 03 50.7	14 58 00	- 8 12				834009
01366	BRATISLAVA, CZECH.	2701	5 13	21 04 52.9	15 24 06	- 9 35				834040

OBS NO	STATION	STA NO	DATE	TIME	R. A.	DECL.	AZIMUTH	ALTITUDE	RANGE	INDEX
01520	OLIFANTSFNTN-BN.S.AF	9002	5 15	3 14 32.267	21 56 12	-14 34				434013
01150	YATSUSHIRO, JAPAN	0272	5 21	11 42 21			180 00	69 00		845301
01026	PRETORIA, S.AFR.	0405	6 29	17 32 04.5			0 24	41 30		845301

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OBS NO	STATION	STA NO	DATE	TIME	R. A.	DECL.	AZIMUTH	ALTITUDE	RANGE	INDEX
00033	ORGAN PASS-BN, N.M.	9001	1 10	1 09 54.108	3 13 18	34 23				434013
00195	BILOXI, MISS.	0090	2 17	11 13 05			0	59		845301
00343	PERTH, AUSTR.	0601	3 17	20 57 18.3			180	88 24		641301

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OBS NO	STATION	STA NO	DATE	TIME	R. A.	DECL.	AZIMUTH	ALTITUDE	RANGE	INDEX
00318	SAN FERNANDO-BN, SP.	9004	7 01	1 54 06.900	20 30 42	7 24				434013
00314	JUPITER-BN, FLA.	9010	7 01	6 27 03.653	19 44 24	13 40				434013
00319	CURACAO-BN, N.W.I.	9009	7 01	6 28 47.507	18 48 54	43 22				434013
00361	WHITTIER, CAL.	0012	7 01	8 43 24.5			180 00	52 06		845301
00362	WHITTIER, CAL.	0012	7 01	8 47 38.9			141 15 00	58 15 00		845301
00320	ORGAN PASS-BN, N.M.	9001	7 01	9 04 56.146	0 00 24	25 08				434013
00315	JUPITER-BN, FLA.	9010	7 01	9 05 26.347	22 57 00	42 54				434013
00323	MAUI-BN, HAWAII	9012	7 01	10 00 58.494	19 31 54	17 46				434013
00321	SACRAMENTO, CAL.	8517	7 01	11 18 15.3			180 00	74 26		641301
00335	CURACAO-BN, NWI	9009	7 02	5 27 50.900	18 27 36	36 18				434013
00325	JUPITER-BN, FLA.	9010	7 02	5 28 36.614	20 15 24	7 42				434013
00326	JUPITER-BN, FLA.	9010	7 02	8 02 35.024	20 43 18	33 49				434013
00324	WOOMERA-BN, AUSTR.	9003	7 02	9 33 25.706	13 01 12	-15 21				434013
00327	SACRAMENTO, CAL.	8517	7 02	10 15 28.1			180 00	66 20		641301
00322	ORGAN PASS-BN, N.M.	9001	7 02	10 23 03.879	21 44 30	33 55				434013
00328	MAUI-BN, HAWAII	9012	7 02	12 30 16.204	19 10 48	37 36				434013
00330	OLIFTSFTN-BN, S.AF.	9002	7 02	16 28 37.7	15 45 18	-50 48				434023
00331	AREQUIPA-BN, PERU	9007	7 02	23 25 29.576	18 00 00	-67 14				434023
00332	SACRAMENTO, CAL.	8517	7 03	9 12 59.3			180 00	53 53		641301
00359	STOCKTON, CAL.	8549	7 03	9 13 44.9	19 50 50	3 54				845001
00363	WHITTIER, CAL.	0012	7 03	9 14 53.2			180 00	70 42		845301
00329	ORGAN PASS-BN, N.M.	9001	7 03	9 20 52.600	20 57 48	28 40				434013
00333	PERTH, AUSTR.	0601	7 03	10 56 39.3			0	55 50		845301
00338	V. DOLORES-BN, ARG.	9011	7 03	22 27 00.847	12 38 18	-14 03				434013
00358	CINCINNATI, OHIO	0050	7 04	5 53 42	18 59 42	-11 06				845001
00334	CURACAO-BN, NWI	9009	7 04	5 58 43.758	18 47 42	50 48				434013
00402	WHITTIER, CAL.	0012	7 04	8 12 44.8			180 00	54 30		845301
00340	MAUI-BN, HAWAII	9012	7 04	10 29 38.928	19 16 36	22 20				434013
00397	WALNUT CREEK, CAL.	8553	7 04	10 46 08.2	21 25 30	24 36				641001
00341	MAUI-BN, HAWAII	9012	7 04	13 01 58.790	20 00 00	48 45				434013
00339	V. DOLORES-BN, ARG.	9011	7 04	23 54 21.042	12 33 12	27 11				434013
00336	CURACAO-BN, NWI	9009	7 05	4 57 31.785	18 09 00	43 49				434013
00360	ALBUQUERQUE, N.M.	0103	7 05	7 16 19.5			180	52 12		845302
00337	CURACAO-BN, NWI	9009	7 05	7 31 36.615	19 55 36	62 02				434013
00398	WALNUT CREEK, CAL.	8553	7 05	9 43 52.7	20 28 00	17 12				641001
00344	CURACAO-BN, N.W.I.	9009	7 06	6 29 56.373	19 34 00	59 56				434013
00399	WALNUT CREEK, CAL.	8556	7 06	8 42 01.8	19 29 00	4 48				845001
00400	WALNUT CREEK, CAL.	8535	7 06	8 42 08.2	19 32 00	5 15				845001
00401	WALNUT CREEK, CAL.	8535	7 06	8 42 43.5	19 46 15	6 48				845001
00357	STOCKTON, CAL.	8549	7 06	11 17 24.9	22 16 30	28 36				845001
00343	TOKYO-BN, JAPAN	9005	7 06	15 40 32.300	20 06 30	17 43				434013
00342	OLIFANTSFNTN-BN.S.AF	9002	7 06	17 26 43.5	13 14 00	22 41				434013
00351	AREQUIPA-BN, PERU	9007	7 07	0 23 57.444	14 08 42	- 8 26				434013
00403	WHITTIER, CAL.	0012	7 07	7 42 15.9			180 00	57 18		845301
00347	ORGAN PASS-BN, N.M.	9001	7 07	7 48 56.970	20 18 12	24 08				434013
00543	SACRAMENTO, CAL.	8517	7 07	10 14 29.8			180 00	75 53		641301
00348	ORGAN PASS-BN, N.M.	9001	7 07	10 19 34.780	21 20 00	36 43				434013
00349	TOKYO-BN, JAPAN	9005	7 07	14 40 05.000	19 38 30	7 19				434013
00350	TOKYO-BN, JAPAN	9005	7 07	17 13 29.100	21 56 48	31 17				434013
00366	AREQUIPA-BN, PERU	9007	7 07	23 25 33.702	15 25 36	-45 06				434023
00391	SHIRAZ-BN, IRAN	9008	7 08	0 12 52.644	21 37 48	40 26				434013
00392	SHIRAZ-BN, IRAN	9008	7 08	0 17 29.010	23 22 12	38 04				434013
00354	SAN FERNANDO-BN, SP.	9004	7 08	2 22 16.200	20 47 00	27 26				434013
00725	WALNUT CREEK, CAL.	8553	7 08	9 12 36.0	20 07 00	18 18				641001

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00352	SACRAMENTO, CAL.	8517	7 08	9 12 43.2			180 00	68 50		641301
00355	MAUI-BN, HAWAII	9012	7 08	11 29 25.089	18 59 30	49 21				434013
00356	MAUI-BN, HAWAII	9012	7 08	14 07 12.605	23 20 06	50 25				434013
00381	SHIRAZ-BN, IRAN	9008	7 08	23 11 38.479	21 03 18	41 49				434013
00382	SHIRAZ-BN, IRAN	9008	7 08	23 13 37.730	21 56 00	41 52				434013
00367	AREQUIPA-BN, PERU	9007	7 09	0 52 04.206	11 48 42	17 48				434013
00353	SAN FERNANDO-BN, SP.	9004	7 09	1 21 17.000	20 05 48	21 36				434013
00364	SACRAMENTO, CAL.	8517	7 09	8 11 24.7			180 00	56 50		641301
00412	WHITTIER, CAL.	0012	7 09	8 12 56.8			180 00	75 30		845301
00413	WHITTIER, CAL.	0012	7 09	8 18 39.8			92 00	57 30		845301
00370	MAUI-BN, HAWAII	9012	7 09	10 28 02.217	17 51 42	41 11				434013
00365	SACRAMENTO, CAL.	8517	7 09	10 44 45.2			180 00	78 35		641301
00371	MAUI-BN, HAWAII	9012	7 09	13 01 48.170	20 54 48	55 31				434013
00368	OLIFANTSFNTN-BN,S.AF	9002	7 09	16 57 02.6	11 51 00	26 20				434013
00369	NAINI TAL-BN, INDIA	9006	7 09	19 41 40.520	16 22 48	15 38				434013
00380	AREQUIPA-BN, PERU	9007	7 09	23 54 57.330	13 51 30	13 37				434013
00993	HLOHOVEC, CZECH.	8125	7 10	0 29 54.1	20 53 30	9 12				834009
00994	HLOHOVEC, CZECH.	8125	7 10	0 30 51.8	21 12 00	10 06				834009
00995	HLOHOVEC, CZECH.	8125	7 10	0 32 10.1	21 40 00	10 48				834009
00457	ORGAN PASS-BN, N.M.	9001	7 10	5 46 15.600	18 19 42	13 50				434013
00373	ORGAN PASS-BN, N.M.	9001	7 10	7 16 35.200	19 17 30	23 41				434013
00375	WOOMERA-BN, AUSTR.	9003	7 10	9 04 35.659	12 32 18	34 56				434013
00388	MAUI-BN, HAWAII	9012	7 10	12 00 09.046	19 53 00	56 13				434013
00996	HLOHOVEC, CZECH.	8125	7 10	23 28 16.7	19 49 30	2 06				834009
00997	HLOHOVEC, CZECH.	8125	7 10	23 29 43.8	20 27 18	3 18				834009
00998	HLOHOVEC, CZECH.	8125	7 10	23 30 15.0	20 37 24	3 30				834009
01000	HLOHOVEC, CZECH.	8125	7 10	23 31 02.2	20 56 18	4 18				834009
01001	HLOHOVEC, CZECH.	8125	7 10	23 31 39.1	21 13 06	5 12				834009
01002	HLOHOVEC, CZECH.	8125	7 10	23 33 55.0	21 58 00	5 48				834009
01003	HLOHOVEC, CZECH.	8125	7 10	23 34 15.0	22 05 30	5 30				834009
01004	HLOHOVEC, CZECH.	8125	7 10	23 35 25.1	22 27 12	4 12				834009
01005	HLOHOVEC, CZECH.	8125	7 10	23 36 52.9	22 58 42	3 06				834009
01006	HLOHOVEC, CZECH.	8125	7 10	23 39 14.9	23 45 24	- 1 00				834009
00384	CURACAO-BN, N.W.I.	9009	7 11	3 56 19.997	16 41 42	55 13				434013
00374	ORGAN PASS-BN, N.M.	9001	7 11	6 16 42.600	18 54 42	12 14				434013
00415	CINCINNATI, OHIO	0050	7 11	6 24 06	19 55 08	18 21 00				845001
00386	JUPITER-BN, FLA.	9010	7 11	6 25 35.605	19 56 12	45 53				434013
00372	SACRAMENTO, CAL.	8517	7 11	8 41 43.3			180 00	69 41		641301
00414	WHITTIER, CAL.	0012	7 11	8 43 11.7			180 00	86 54		845301
00416	CINCINNATI, OHIO	0050	7 11	9 00 06	23 15 20	20 49 48				845001
00385	JUPITER-BN, FLA.	9010	7 11	9 00 38.836	23 02 00	39 04				434013
00387	MAUI-BN, HAWAII	9012	7 11	10 58 44.612	18 39 54	54 07				434013
00376	NAINI TAL-BN, INDIA	9006	7 11	17 47 55.380	18 21 48	17 59				434013
00377	NAINI TAL-BN, INDIA	9006	7 11	20 15 32.400	18 30 36	38 25				434013
00378	NAINI TAL-BN, INDIA	9006	7 11	20 17 50.531	19 45 24	42 27				434013
00379	NAINI TAL-BN, INDIA	9006	7 11	22 37 30.800	23 45 00	25 19				434013
00383	CURACAO-BN, N.W.I.	9009	7 12	0 28 21.977	17 02 18	-38 00				434023
00417	CINCINNATI, OHIO	0050	7 12	5 23 58	19 21 01	9 42 36				845001
00451	SACRAMENTO, CAL.	8517	7 12	7 40 54.6			180 00	57 56		641301
00538	WHITTIER, CAL.	0012	7 12	7 42 18.9			180 00	77 42		845301
00539	WHITTIER, CAL.	0012	7 12	7 45 55.4			96 24	64 12		845301
00452	ALBUQUERQUE HIGH,N.M	8534	7 12	7 47 13.6	20 15 12	29 15				845001
00418	CINCINNATI, OHIO	0050	7 12	7 56 11	21 46 18	24 55 12				845001
00425	SHIRAZ-BN, IRAN	9008	7 12	21 39 21.305	20 02 00	45 59				434013
00426	SHIRAZ-BN, IRAN	9008	7 12	21 39 53.873	20 22 00	43 16				434013
01007	BRATISLAVA, CZECH.	8126	7 12	23 58 16.2	20 30 00	8 00				834009
01008	BRATISLAVA, CZECH.	8126	7 12	23 59 07.7	20 49 30	8 36				834009
01009	BRATISLAVA, CZECH.	8126	7 12	23 59 43.3	21 02 54	9 00				834009
01010	BRATISLAVA, CZECH.	8126	7 13	0 00 23.0	21 17 12	9 24				834009
01011	BRATISLAVA, CZECH.	8126	7 13	0 01 32.9	21 41 48	9 48				834009
01012	BRA ISLAVA, CZECH.	8126	7 13	0 02 13.2	21 55 12	9 54				834009
01013	BRATISLAVA, CZECH.	8126	7 13	0 05 15.0	22 49 54	9 36				834009
00408	CURACAO-BN, N.W.I.	9009	7 13	1 55 54.669	14 46 36	20 14				434013
00449	CINCINNATI, OHIO	0050	7 13	4 24 24	18 57 35	- 1 22 12				845001
00447	FT.WORTH, TEXAS	0139	7 13	6 49 27.6	19 43	33 30				845001
00395	NAINI TAL-BN, INDIA	9006	7 13	18 16 22.829	17 45 42	30 41				434013
00396	NAINI TAL-BN, INDIA	9006	7 13	20 44 35.474	18 35 42	39 00				434013
00393	SAN FERNANDO-BN, SP.	9004	7 13	22 50 35.800	18 44 54	0 53				434013
01014	BRATISLAVA, CZECH.	8126	7 13	22 57 57.4	19 30 48	0 42				834009
01016	BRATISLAVA, CZECH.	8126	7 13	22 58 53.5	19 57 36	2 30				834009
01017	BRATISLAVA, CZECH.	8126	7 13	22 59 27.5	20 12 00	3 30				834009
01018	BRATISLAVA, CZECH.	8126	7 13	23 00 02.1	20 21 24	4 18				834009
01019	BRATISLAVA, CZECH.	8126	7 13	23 00 37.6	20 41 06	5 12				834009
00394	SAN FERNANDO-BN, SP.	9004	7 14	1 19 13.600	19 50 12	28 03				434013
00450	CINCINNATI, OHIO	8555	7 14	3 24 29.0	18 12 36	-17 00				845001
00407	JUPITER-BN, FLA.	9010	7 14	3 24 34.536	17 44 18	14 29				434013
00411	JUPITER-BN, FLA.	9010	7 14	5 54 38.297	19 36 30	48 54				434013
00404	ORGAN PASS-BN, N.M.	9001	7 14	8 08 01.850	16 02 12	17 55				434013
00405	ORGAN PASS-BN, N.M.	9001	7 14	8 15 04.110	19 34 30	37 24				434013
00406	JUPITER-BN, FLA.	9010	7 14	8 28 24.858	22 32 00	38 00				434013
00423	CURACAO-BN, NWI	9009	7 14	23 59 11.137	16 46 24	-31 01				434023
00409	SAN FERNANDO-BN, SP.	9004	7 15	0 19 37.000	19 29 42	23 58				434013
00410	JUPITER-BN, FLA.	9010	7 15	2 25 29.059	17 09 18	-11 14				434013
00424	CURACAO-BN, NWI	9009	7 15	2 26 05.591	14 46 06	51 17				434013
00420	NAINI TAL-BN, INDIA	9006	7 15	18 45 39.803	17 49 48	40 17				434013
00421	NAINI TAL-BN, INDIA	9006	7 15	21 21 07.897	22 30 12	33 48				434013

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00428	SAN FERNANDO-BN, SP.	9004	7 15	23 18 51.600	18 12 18	11 31				434013
00422	CURACAO-BN, NWI	9009	7 16	1 27 06.535	14 47 24	40 33				434013
00429	SAN FERNANDO-BN, SP.	9004	7 16	1 48 50.200	20 19 42	28 56				434013
00419	ORGAN PASS-BN, N.M.	9001	7 16	3 47 47.800	17 49 42	-19 57				434013
00427	SACRAMENTO, CAL.	8517	7 16	8 40 46.8			180 00	75 28		641301
00430	SAN FERNANDO-BN, SP.	9004	7 16	22 20 20.500	18 20 42	1 06				434013
00431	SAN FERNANDO-BN, SP.	9004	7 17	0 49 09.400	19 58 42	28 42				434013
00432	SAN FERNANDO-BN, SP.	9004	7 17	3 20 43.800	22 01 24	18 10				434013
00433	SACRAMENTO, CAL.	8517	7 17	7 40 25.1			180 00	70 14		641301
00438	AREQUIPA-BN, PERU	9007	7 17	23 04 00.956	15 12 00	27 48				434013
00446	JUPITER-BN, FLA.	9010	7 18	4 23 46.614	18 11 00	50 08				434013
00540	VAN NUYS, CAL.	0113	7 18	6 41 21			180	80 45 00		845301
00453	ALBUQUERQUE HIGH,N.M	8534	7 18	6 45 17.0	19 16 24	30 48				845001
00454	ALBUQUERQUE HIGH,N.M	8534	7 18	6 46 09.0	19 56 36	31 12				845001
00439	AREQUIPA-BN, PERU	9007	7 18	9 48 24.693	2 36 00	26 36				434013
00437	NAINI TAL-BN, INDIA	9006	7 18	15 49 39.929	18 31 48	16 14				434013
00435	SAN FERNANDO-BN, SP.	9004	7 18	22 49 00.000	18 04 00	13 53				434013
00440	CURACAO-BN, N.W.I.	9009	7 19	0 57 31.099	13 41 18	49 51				434013
00436	SAN FERNANDO-BN, SP.	9004	7 19	1 18 31.900	20 23 30	27 24				434013
00434	ORGAN PASS-BN, N.M.	9001	7 19	3 18 11.100	17 33 42	-18 24				434013
00535	SACRAMENTO, CAL.	8517	7 19	5 40 46.9			180 00	52 38		641301
00442	SAN FERNANDO-BN, SP.	9004	7 19	21 50 24.000	18 03 42	2 06				434013
00441	CURACAO-BN, N.W.I.	9009	7 19	23 58 35.696	13 47 06	23 15				434013
00549	SAN FERNANDO-BN, SP.	9004	7 20	20 51 30.500	17 38 42	-13 55				434013
00443	JUPITER-BN, FLA.	9010	7 21	1 25 54.535	16 28 06	0 04				434013
00444	JUPITER-BN, FLA.	9010	7 21	3 53 40.193	17 51 12	55 11				434013
00445	JUPITER-BN, FLA.	9010	7 21	6 24 16.689	21 09 12	43 22				434013
00455	CURACAO-BN, N.W.I.	9009	7 22	0 28 22.334	13 01 48	62 07				434013
00536	SACRAMENTO, CAL.	8517	7 22	5 11 05.0			180 00	43 56		641301
00461	MAUI-BN, HAWAII	9012	7 22	7 28 31.427	14 37 18	61 01				434013
00448	ORGAN PASS-BN, N.M.	9001	7 22	7 55 27.932	0 36 42	4 31				434013
00456	CURACAO-BN, N.W.I.	9009	7 22	8 13 24.265	1 43 12	- 0 42				434013
00462	MAUI-BN, HAWAII	9012	7 22	9 58 24.954	20 05 36	67 47				434013
00485	SHIRAZ-BN., IRAN	9008	7 22	16 40 18.750	16 44 06	6 28				434013
00484	SHIRAZ-BN., IRAN	9008	7 22	16 40 23.740	16 54 12	7 08				434013
00458	SAN FERNANDO-BN, SP.	9004	7 22	23 47 41.600	19 02 00	27 08				434013
00460	JUPITER-BN, FLA.	9010	7 23	1 54 49.685	15 35 24	31 56				434013
00459	SAN FERNANDO-BN, SP.	9004	7 23	2 16 21.900	20 32 06	12 41				434013
00465	MAUI-BN, HAWAII	9012	7 23	6 29 39.675	14 26 24	50 28				434013
00467	MAUI-BN, HAWAII	9012	7 23	11 28 53.633	11 21 24	49 47				434013
00463	SAN FERNANDO-BN, SP.	9004	7 23	22 48 24.500	18 21 30	24 53				434013
00464	SAN FERNANDO-BN, SP.	9004	7 24	1 17 34.000	20 37 42	16 20				434013
00600	ORGAN PASS-BN, N.M.	9001	7 24	3 17 30.207	17 03 06	5 39				434013
00601	ORGAN PASS-BN, N.M.	9001	7 24	5 44 34.650	18 27 24	41 43				434013
00494	MAUI-BN, HAWAII	9012	7 24	7 58 25.280	15 38 06	74 17				434013
00602	ORGAN PASS-BN, N.M.	9001	7 24	8 12 56.970	14 49 00	33 05				434013
00495	MAUI-BN, HAWAII	9012	7 24	10 28 33.132	21 10 06	60 13				434013
00496	MAUI-BN, HAWAII	9012	7 24	12 59 31.490	21 59 42	22 42				434013
00472	WOOMERA-BN., AUSTR.	9003	7 24	20 32 07.399	3 07 12	3 08				434013
00473	SAN FERNANDO-BN., SP	9004	7 24	21 50 04.600	18 34 24	18 56				434013
00474	SAN FERNANDO-BN., SP	9004	7 25	0 17 23.700	19 48 30	22 00				434013
00523	NORTH CANTON, OHIO	0053	7 25	2 24 04	17 06	- 7 20				845031
00475	SAN FERNANDO-BN., SP	9004	7 25	2 46 00.500	20 51 42	1 17				434013
00537	SACRAMENTO, CAL.	8517	7 25	4 41 28.7			180 00	43 56		641301
00541	VAN NUYS, CAL.	0113	7 25	4 42 21			180	72 15 00		845301
00542	VAN NUYS, CAL.	0113	7 25	4 43 06.5	18 06 42	20 19				845001
00468	ORGAN PASS-BN., N.M.	9001	7 25	4 45 16.240	17 25 42	39 07				434013
00525	ALAMOGORDO, N.M.	0102	7 25	4 45 36			0	85 06		845302
00526	ALBUQUERQUE, N.M.	8534	7 25	4 46 17.1	18 51 48	28 00				845001
00527	ALBUQUERQUE, N.M.	8534	7 25	4 46 48.5	19 28 36	27 48				845001
00528	ALBUQUERQUE, N.M.	8534	7 25	7 14 01.4	20 13 24	22 54				845001
00529	ALBUQUERQUE, N.M.	8534	7 25	7 14 35	20 37 12	21 48				845001
00483	AREQUIPA-BN., PERU	9007	7 25	7 37 04.914	1 12 18	33 20				434013
00497	MAUI-BN, HAWAII	9012	7 25	9 28 20.375	21 16 00	69 48				434013
00469	ORGAN PASS-BN., N.M.	9001	7 25	9 44 10.900	21 28 42	0 33				434013
00481	TOKYO-BN., JAPAN	9005	7 25	11 38 45.800	17 49 30	16 12				434013
00498	MAUI-BN, HAWAII	9012	7 25	11 59 28.413	22 10 00	32 40				434013
00499	MAUI-BN, HAWAII	9012	7 25	14 32 11.925	22 48 48	- 8 17				434013
00482	TOKYO-BN., JAPAN	9005	7 25	16 36 19.600	21 21 48	1 05				434013
00476	SAN FERNANDO-BN., SP	9004	7 25	20 50 29.4	17 00 54	2 01				434013
00477	SAN FERNANDO-BN., SP	9004	7 25	23 17 46.300	18 59 30	25 13				434013
00478	SAN FERNANDO-BN., SP	9004	7 26	1 46 29.300	20 36 12	5 53				434013
00470	ORGAN PASS-BN., N.M.	9001	7 26	3 46 00.000	16 05 18	26 01				434013
00531	ROCHESTER, N.Y.	0047	7 26	3 54 01.8	18 54	4 00				845002
00530	ROCHESTER, N.Y.	8564	7 26	3 54 03.6	18 56	3 36				845001
00486	MAUI-BN., HAWAII	9012	7 26	6 00 18.553	13 35 36	61 23				434013
00638	SAN JOSE, CAL.	0134	7 26	6 09 53.5			180	73 00		845301
00613	VAN NUYS, CAL.	0113	7 26	6 10 42			0	89 30		845301
00615	WHITTIER-D, CAL.	8566	7 26	6 10 53.3			0 00	87 30		845301
00471	ORGAN PASS-BN., N.M.	9001	7 26	6 14 11.400	19 19 54	38 12				434013
00616	WHITTIER-D, CAL.	8566	7 26	6 16 07.5			89 48	37 12		845301
00487	MAUI-BN., HAWAII	9012	7 26	8 29 03.892	20 19 12	74 59				434013

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00488	MAUI-BN., HAWAII	9012	7 26	10 59 16.483	21 57 12	44 02				434013
00517	SHIRAZ-BN, IRAN	9008	7 26	17 37 49.176	15 10 36	47 01				434013
00518	SHIRAZ-BN, IRAN	9008	7 26	17 38 28.626	16 30 06	52 08				434013
00479	SAN FERNANDO-BN., SP	9004	7 26	22 18 04.200	17 32 54	23 51				434013
00532	ROCHESTER, N.Y.	0047	7 27	2 54 45.8	17 58 42	- 1 21 00				845002
00534	STATE COLLEGE, PA.	0060	7 27	2 54 46	17 58	6				845001
00533	ROCHESTER, N.Y.	8564	7 27	2 54 47.9	18 00 30	- 1 31 48				845001
00480	SAN FERNANDO-BN., SP	9004	7 27	3 14 26.000	20 41 24	- 7 37				434013
00614	VAN NUYS, CAL.	0113	7 27	5 11 38			180	87 30		845301
00617	WHITTIER-D, CAL.	8566	7 27	5 11 45.4			180 00	89 24		845301
00524	FT WORTH, TEXAS	0139	7 27	5 17 16	19 06	38 35				845001
00493	CURACAO-BN. N.W.I.	9009	7 27	5 29 40.299	22 46 00	46 40				434013
00500	MAUI-BN, HAWAII	9012	7 27	7 28 33.495	13 58 54	77 34				434013
00501	MAUI-BN, HAWAII	9012	7 27	9 57 30.454	20 08 00	63 35				434013
00489	TAIPEI, TAIWN	0502	7 27	12 03 14	16 50	67 30				845001
00502	MAUI-BN, HAWAII	9012	7 27	12 29 01.520	21 50 12	15 28				434013
00510	SHIRAZ-BN, IRAN	9008	7 27	16 39 47.989	16 04 00	43 36				434013
00511	SHIRAZ-BN, IRAN	9008	7 27	16 40 23.995	17 32 00	46 00				434013
00504	WOOMERA-BN, AUSTR.	9003	7 27	19 50 50.226	0 57 36	15 55				434013
00490	SAN FERNANDO-BN, SP.	9004	7 27	21 19 39.300	17 28 24	17 54				434013
00491	SAN FERNANDO-BN, SP.	9004	7 27	23 46 55.400	19 19 36	18 07				434013
00492	SAN FERNANDO-BN, SP.	9004	7 28	2 15 53.900	20 45 36	- 6 02				434013
00618	WHITTIER-D, CAL.	8566	7 28	4 12 50.4			180 00	78 18		845301
00661	FT. WORTH, TEXAS	0139	7 28	4 17 59.6	18 07	42 24				845001
00611	DALLAS, TEXAS	0129	7 28	4 18 10.8	18 12 18	41 48				845001
00503	CURACAO-BN, N.W.I.	9009	7 28	7 00 43.583	22 43 12	14 44				434013
00519	MAUI-BN, HAWAII	9012	7 28	8 57 55.256	19 35 12	73 40				434013
00508	TOKYO-BN, JAPAN	9005	7 28	11 09 03.800	17 34 36	17 45				434013
00509	TOKYO-BN, JAPAN	9005	7 28	13 34 37.900	17 42 00	24 08				434013
00507	MITAKA, JAPAN	0229	7 28	13 35 47.2			194 12	77 00		845301
00520	MAUI-BN, HAWAII	9012	7 28	13 59 41.274	22 02 54	-11 37				434013
00554	SHIRAZ-BN, IRAN	9008	7 28	18 07 26.956	16 29 24	56 18				434013
00555	SHIRAZ-BN, IRAN	9008	7 28	18 08 30.132	18 51 24	55 54				434013
00505	SAN FERNANDO-BN, SP.	9004	7 28	22 47 01.200	17 49 18	22 50				434013
00612	DALLAS, TEXAS	0129	7 29	3 19 13.5	17 20	41				845001
00656	NORTH CANTON, OHIO	8536	7 29	3 22 56	18 17	5 18				641001
00657	NORTH CANTON, OHIO	8536	7 29	3 23 01	18 23 30	5 12				641001
00662	ROCHESTER, N.Y.	8564	7 29	3 24 05.7	18 39	- 1 00				845001
00506	SAN FERNANDO-BN, SP.	9004	7 29	3 43 03.400	20 37 36	-15 22				434013
00512	CURACAO-BN, N.W.I.	9009	7 29	8 32 38.710	22 53 12	-16 28				434013
00521	MAUI-BN, HAWAII	9012	7 29	12 58 35.869	21 39 42	- 2 13				434013
00572	SHIRAZ-BN,IRAN	9008	7 29	17 09 23.250	17 40 12	58 50				434013
00513	WOOMERA-BN, AUSTR.	9003	7 29	20 20 44.642	0 52 24	3 38				434013
00514	WOOMERA-BN, AUSTR.	9003	7 29	20 29 11.372	2 42 36	-11 50				434013
00515	WOOMERA-BN, AUSTR.	9003	7 29	20 34 25.318	4 01 00	-19 24				434013
00516	SAN FERNANDO-BN, SP.	9004	7 29	21 48 33.000	17 38 54	23 12				434013
00660	CINCINNATI, OHIO	8555	7 30	2 25 40	19 00	8 18				845001
00653	ST. LOUIS, MO.	0140	7 30	4 48 36	18 40 15	9 15				845001
00654	ST. LOUIS, MO.	0140	7 30	4 48 39	18 42 45	9 12				845001
00655	ST. LOUIS, MO.	0140	7 30	4 49 21	19 23 00	7 51				845001
00547	AREQUIPA-BN, PERU	9007	7 30	7 38 03.382	0 40 36	18 12				434013
00548	VILLA DOL.-BN, ARG.	9011	7 30	7 50 55.594	2 26 54	6 07				434013
00579	MAUI-BN, HAWAII	9012	7 30	14 31 00.599	22 21 00	-26 51				434023
00544	WOOMERA-BN, AUSTR.	9003	7 30	19 22 48.131	1 24 24	4 44				434013
00545	SAN FERNANDO-BN, SP.	9004	7 30	20 50 17.100	17 44 18	18 44				434013
00546	SAN FERNANDO-BN, SP.	9004	7 30	23 15 58.500	18 06 00	14 25				434013
00551	ORGAN PASS-BN, N.M.	9001	7 31	3 45 49.300	16 45 18	46 01				434013
00658	NORTH CANTON, OHIO	8536	7 31	3 52 19.8	18 59 30	0 15				641041
00659	NORTH CANTON, OHIO	8544	7 31	3 52 25.5	19 02	0 15				845001
00552	AREQUIPA-BN, PERU	9007	7 31	6 37 13.008	0 39 25	26 24				434013
00575	VILLA DOL.-BN, ARG.	9011	7 31	6 44 58.759	1 26 48	20 56				434013
00580	MAUI-BN, HAWAII	9012	7 31	8 28 31.454	20 50 12	72 16				434013
00550	CURACAO-BN, N.W.I.	9009	7 31	9 02 30.916	22 43 24	-28 43				434023
00553	AREQUIPA-BN, PERU	9007	7 31	9 11 29.759	1 02 12	-12 34				434013
00576	VILLA DOL.-BN, ARG.	9011	7 31	9 16 02.184	1 29 18	- 1 45				434013
00568	TOKYO-BN, JAPAN	9005	7 31	10 39 48.700	18 03 36	19 46				434013
00581	MAUI-BN, HAWAII	9012	7 31	13 30 34.570	22 12 24	-22 52				434013
00564	SAN FERNANDO-BN, SP.	9004	7 31	22 17 48.600	18 21 12	18 08				434013
01015	BRATISLAVA, CZECH.	8126	7 31	22 58 02.6	19 35 30	1 00				834009
00559	OLIFNTSFNTN-BN, S.AF	9002	8 01	1 19 14.3	2 02 42	1 14				434013
00651	NORTH CANTON, OHIO	0053	8 01	2 53 08.5	17 58 30	1 00				845001
00652	NORTH CANTON, OHIO	0053	8 01	2 53 24	18 09	0 55				845001
00560	OLIFNTSFNTN-BN, S.AF	9002	8 01	3 49 50.9	2 06 30	-24 02				434023
00650	VAN NUYS, CAL.	0113	8 01	5 11 03			180	89 45 00		845301
00556	ORGAN PASS-BN, N.M.	9001	8 01	5 14 32.400	19 16 00	31 44				434013
00589	MAUI-BN, HAWAII	9012	8 01	7 29 21.438	21 22 18	79 40				434013
00573	CURACAO-BN, N.W.I.	9009	8 01	8 00 19.940	22 13 24	-20 10				434013
00569	TOKYO-BN, JAPAN	9005	8 01	12 06 31.100	17 22 36	24 30				434013
00590	MAUI-BN, HAWAII	9012	8 01	15 00 35.388	22 13 42	-35 03				434023
00563	WOOMERA-BN, AUSTR.	9003	8 01	17 21 30.205	1 14 42	17 14				434013
00562	WOOMERA-BN, AUSTR.	9003	8 01	19 53 38.709	1 36 54	- 9 41				434013
00565	SAN FERNANDO-BN, SP.	9004	8 01	21 18 53.700	17 27 54	20 54				434013
00561	OLIFNTSFNTN-BN, S.AF	9002	8 02	0 13 14.2	0 53 24	19 15				434013
00733	VAN NUYS, CAL.	0113	8 02	4 12 15			0 00	89 15 00		845301
00557	ORGAN PASS-BN, N.M.	9001	8 02	4 15 15.200	18 07 12	43 11				434013
00571	AREQUIPA-BN, PERU	9007	8 02	7 07 07.991	0 24 36	13 50				434013

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00577	VILLA DOL.-BN, ARG.	9011	8 02	7 17 46.374	1 56 12	5 06				434013
00574	AREQUIPA-BN, PERU	9007	8 02	9 43 49.291	1 34 30	-32 05				434023
00578	VILLA DOL.-BN, ARG.	9011	8 02	9 51 14.980	2 53 12	-21 59				434013
00570	NAINI TAL-BN, INDIA	9006	8 02	15 47 34.915	18 56 00	57 22				434013
00566	SAN FERNANDO-BN, SP.	9004	8 02	20 20 15.800	16 41 18	17 53				434013
00567	SAN FERNANDO-BN, SP.	9004	8 02	22 46 12.300	17 51 24	7 46				434013
00558	OLIFNTSFNTN-BN, S.AF	9002	8 03	1 47 57.0	1 56 18	-10 04				434013
00582	ORGAN PASS-BN, N.M.	9001	8 03	3 16 08.950	16 13 54	48 40				434013
00640	WICHITA, KAN.	0028	8 03	3 18 28.0	17 28	12 06				845001
00639	FT.WORTH, TEXAS	0139	8 03	3 18 31	17 39	43 20				845001
00641	ST. LOUIS, MO.	0140	8 03	3 19 59	17 58 00	5 45				845001
00642	ST. LOUIS, MO.	0140	8 03	3 20 09.5	17 46 20	5 30				845001
00643	NORTH CANTON, OHIO	8536	8 03	3 22 23	18 35 30	- 6 30				641001
00644	NORTH CANTON, OHIO	8536	8 03	3 22 28	18 42	- 6 36				641001
00645	NORTH CANTON, OHIO	8544	8 03	3 22 34	18 44 30	- 6 10				845001
00723	WALNUT CREEK, CAL.	8535	8 03	5 39 20.7	18 14 00	6 45				845001
00732	WHITTIER-D, CAL.	8566	8 03	5 40 24.8			180 00	78 30		845301
00734	VAN NUYS, CAL.	0113	8 03	5 40 16			180 00	77 45 00		845301
00583	ORGAN PASS-BN, N.M.	9001	8 03	5 42 02.500	17 37 48	25 40				434013
00591	MAUI-BN, HAWAII	9012	8 03	7 57 03.389	19 00 30	78 51				434013
00587	AREQUIPA-BN, PERU	9007	8 03	8 38 32.030	0 27 12	-15 12				434013
00685	SHIRAZ-BN, IRAN	9008	8 03	17 08 32.109	17 06 24	62 34				434013
00686	SHIRAZ-BN, IRAN	9008	8 03	17 09 25.753	19 39 12	54 50				434013
00584	WOOMERA-BN, AUSTR.	9003	8 03	20 11 24.956	23 06 24	1 39				434013
00585	WOOMERA-BN, AUSTR.	9003	8 03	20 26 23.237	2 28 42	-25 32				434023
00586	WOOMERA-BN, AUSTR.	9003	8 03	20 36 49.277	5 30 06	-31 30				434023
00592	SAN FERNANDO-BN, SP.	9004	8 03	21 47 36.800	17 23 18	13 33				434013
00595	OLIFNTSFNTN-BN, S.AF	9002	8 04	0 42 28.700	0 47 24	8 47				434013
00596	OLIFNTSFNTN-BN, S.AF	9002	8 04	3 16 05.400	1 24 18	-24 56				434023
01135	WHITTIER, CAL.	8566	8 04	4 41 28.3			180 00	88 12		845301
00728	CHINA LAKE, CAL.	0098	8 04	4 41 32.0			180 00	75 42		641302
00649	SAN DIEGO, CAL.	0133	8 04	4 42 06	18 33	38 07				845001
00593	AREQUIPA-BN, PERU	9007	8 04	7 36 27.202	0 09 36	- 2 11				434013
00588	VILLA DOL.-BN, ARG.	9011	8 04	8 54 49.298	0 49 42	-20 13				434013
00594	AREQUIPA-BN, PERU	9007	8 04	10 13 05.223	1 22 30	-41 38				434023
00597	WOOMERA-BN, AUSTR.	9003	8 04	19 12 38.008	23 16 00	5 14				434013
00598	WOOMERA-BN, AUSTR.	9003	8 04	19 23 17.987	1 45 30	-16 32				434013
00599	WOOMERA-BN, AUSTR.	9003	8 04	19 33 43.427	4 28 18	-27 11				434023
00605	JUPITER-BN, FLA.	9010	8 05	1 25 27.335	18 59 30	74 25				434013
00603	OLIFNTSFNTN-BN, S.AF	9002	8 05	2 02 42.096	0 41 18	-13 18				434013
00729	CHINA LAKE, CAL.	0098	8 05	3 42 52.6			180 00	78 54		641302
00722	FT. WORTH, TEXAS	0139	8 05	3 47 37	18 05	29 20				845001
00604	AREQUIPA-BN, PERU	9007	8 05	9 09 38.553	0 40 48	-32 07				434023
00630	TOKYO-BN, JAPAN	9005	8 05	10 38 47.900	17 31 12	23 13				434013
00609	NAINI TAL-BN, INDIA	9006	8 05	15 17 33.773	17 47 48	60 27				434013
00606	WOOMERA-BN, AUSTR.	9003	8 05	18 14 01.429	23 35 36	9 13				434013
00610	SAN FERNANDO-BN, SP.	9004	8 05	22 16 05.900	17 03 54	1 14				434013
00607	OLIFNTSFNTN-BN, S.AF	9002	8 06	1 12 07.9	0 41 30	- 5 15				434013
00608	OLIFNTSFNTN-BN, S.AF	9002	8 06	3 46 05.0	1 32 48	-35 03				434023
00724	WALNUT CREEK, CAL.	8535	8 06	5 09 42.6	18 00 45	- 0 42				845001
00726	SACRAMENTO, CAL.	8517	8 06	5 09 44.8			180 00	48 18		641301
00730	CHINA LAKE, CAL.	0098	8 06	5 10 47.4			180 00	60 07 48		641302
00737	WHITTIER-D, CAL.	8566	8 06	5 10 41.9			180 00	71 00		845301
00738	WHITTIER-D, CAL.	8566	8 06	5 11 54.5			134 18	55 48		845301
00619	AREQUIPA-BN, PERU	9007	8 06	8 06 23.684	0 04 30	19 22				434013
00631	TOKYO-BN, JAPAN	9005	8 06	12 06 15.000	18 02 00	3 55				434013
00624	WOOMERA-BN, AUSTR.	9003	8 06	17 17 23.213	0 27 42	8 06				434013
00625	WOOMERA-BN, AUSTR.	9003	8 06	17 19 01.523	0 51 00	4 01				434013
00626	WOOMERA-BN, AUSTR.	9003	8 06	17 26 57.312	2 48 18	-12 38				434013
00627	WOOMERA-BN, AUSTR.	9003	8 06	19 35 44.676	21 57 36	6 26				434013
00628	WOOMERA-BN, AUSTR.	9003	8 06	19 51 51.177	1 34 48	-25 10				434023
00629	WOOMERA-BN, AUSTR.	9003	8 06	20 05 29.717	5 29 30	-31 51				434023
00771	SAN FERNANDO-BN, SP.	9004	8 06	21 18 10.100	17 25 00	5 56				434013
00620	OLIFNTSFNTN-BN, S.AF	9002	8 07	0 15 04.508	1 14 30	- 2 51				434013
00621	OLIFNTSFNTN-BN, S.AF	9002	8 07	2 40 20.808	0 07 24	-21 13				434013
00622	OLIFNTSFNTN-BN, S.AF	9002	8 07	2 45 08.288	1 30 24	-30 39				434023
00623	OLIFNTSFNTN-BN, S.AF	9002	8 07	2 49 25.170	2 46 24	-36 21				434023
00731	CHINA LAKE, CAL.	0098	8 07	4 11 56.0			180 00	70 18		641302
00739	WHITTIER-D, CAL.	8566	8 07	4 11 51.1			180 00	84 30		845301
00745	SAN JOSE, CAL.	0134	8 07	4 11 00.8			180	59 36		845301
00632	ORGAN PASS-BN, N.M.	9001	8 07	4 14 47.300	18 20 24	21 01				434013
00740	WHITTIER-D, CAL.	8566	8 07	4 15 56.7			103 18	23 12		845301
00670	AREQUIPA-BN, PERU	9007	8 07	7 07 51.364	0 39 42	-15 22				434013
00671	AREQUIPA-BN, PERU	9007	8 07	9 40 52.085	1 05 12	-44 57				434023
00684	NAINI TAL-BN, INDIA	9006	8 07	15 46 58.483	18 40 18	37 50				434013
00675	WOOMERA-BN, AUSTR.	9003	8 07	18 50 57.260	1 25 24	-19 27				434013
00681	SAN FERNANDO-BN, SP.	9004	8 07	20 19 34.200	16 40 12	13 02				434013
00713	SHIRAZ-BN, IRAN	9008	8 08	17 08 34.593	18 43 30	39 50				434013
00714	SHIRAZ-BN, IRAN	9008	8 08	17 08 59.795	19 24 36	35 00				434013
00676	WOOMERA-BN, AUSTR.	9003	8 08	17 48 18.715	0 46 54	- 8 17				434013
00677	WOOMERA-BN, AUSTR.	9003	8 08	20 14 59.906	0 14 00	-24 18				434023
00682	SAN FERNANDO-BN, SP.	9004	8 08	21 46 56.900	17 21 42	- 9 09				434013
00673	OLIFNTSFNTN-BN, S.AF	9002	8 09	0 40 56.800	1 32 30	-10 37				434013
00727	NORTH CANTON, OHIO	8536	8 09	2 23 05.5	18 05 30	-20 12				641001
00741	WHITTIER-D, CAL.	8566	8 09	4 41 04.2			180 00	62 12		845301
00742	WHITTIER-D, CAL.	8566	8 09	4 42 41.2			135 06	42 24		845301

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00687	AREQUIPA-BN, PERU	9007	8 09	7 36 41.000	0 18 24	-29 13				434023
00678	WOOMERA-BN, AUSTR.	9003	8 09	19 10 09.838	22 44 18	- 8 50				434013
00679	WOOMERA-BN, AUSTR.	9003	8 09	19 20 52.373	1 41 06	-29 42				434023
00680	WOOMERA-BN, AUSTR.	9003	8 09	19 31 23.173	4 48 12	-33 02				434023
00683	SAN FERNANDO-BN, SP.	9004	8 09	20 48 28.800	16 56 00	- 1 38				434013
00674	OLIFNTSFNTN-BN, S.AF	9002	8 10	2 11 19.200	0 39 06	-31 03				434023
00646	CINCINNATI, OHIO	0050	8 10	2 49 12	13 55 24	2 03 00				845001
00647	CINCINNATI, OHIO	0050	8 10	2 52 42	18 12 49	7 52 12				845001
00743	WHITTIER-D, CAL.	8566	8 10	3 42 17.1			180 00	78 12		845301
00672	ORGAN PASS-BN, N.M.	9001	8 10	3 44 50.400	19 16 18	5 55				434013
00744	WHITTIER-D, CAL.	8566	8 10	3 46 36.1			107 24	17 36		845301
00648	CINCINNATI, OHIO	0050	8 10	5 14 49	16 10 58	2 09 00				845001
00688	WOOMERA-BN, AUSTR.	9003	8 10	18 12 53.381	23 21 48	- 9 25				434013
00689	WOOMERA-BN, AUSTR.	9003	8 10	18 17 47.391	0 48 54	-20 31				434013
00690	WOOMERA-BN, AUSTR.	9003	8 10	20 40 28.151	23 14 18	-22 03				434013
00746	FT. WORTH, TEXAS	0139	8 11	2 48 25.8	17 32 30	12 25				845001
00691	AREQUIPA-BN, PERU	9007	8 11	8 05 15.158	23 48 24	-39 50				434023
00693	JUPITER-BN, FLA.	9010	8 12	1 54 28.154	19 03 30	28 55				434013
00692	OLIFANTSFNTN-BN.S.AF	9002	8 12	2 43 59.198	1 51 36	-42 56				434023
00850	CHINA LAKE C, CAL	5073	8 12	4 09 37.011			241 02 19.97	33 39 22.7		229304
00851	CHINA LAKE C, CAL	5073	8 12	4 09 38.011			241 00 07.93	34 00 11.2		229304
00852	CHINA LAKE C, CAL	5073	8 12	4 09 39.011			240 49 12.89	34 16 19.5		229304
00853	CHINA LAKE C, CAL	5073	8 12	4 09 40.011			240 39 06.19	34 44 21.0		229304
00854	CHINA LAKE C, CAL	5073	8 12	4 09 41.011			240 35 25.17	35 02 39.5		229304
00855	CHINA LAKE C, CAL	5073	8 12	4 09 42.011			240 17 08.55	35 17 11.6		229304
00856	CHINA LAKE C, CAL	5073	8 12	4 09 43.011			239 07 05.25	35 30 07.4		229304
00857	CHINA LAKE C, CAL	5073	8 12	4 09 44.011			238 54 59.17	35 27 05.9		229304
00858	CHINA LAKE C, CAL	5073	8 12	4 09 45.011			238 39 57.48	35 33 05.8		229304
00859	CHINA LAKE C, CAL	5073	8 12	4 09 46.011			238 20 42.10	36 01 20.5		229304
00860	CHINA LAKE C, CAL	5073	8 12	4 09 47.011			238 01 24.05	36 13 19.9		229304
00861	CHINA LAKE C, CAL	5073	8 12	4 09 48.011			237 42 25.97	36 21 37.4		229304
00862	CHINA LAKE C, CAL	5073	8 12	4 09 49.011			237 10 12.40	36 33 56.5		229304
00863	CHINA LAKE C, CAL	5073	8 12	4 09 50.011			236 47 19.16	36 37 31.5		229304
00864	CHINA LAKE C, CAL	5073	8 12	4 09 51.011			236 33 35.51	36 53 06.2		229304
00865	CHINA LAKE C, CAL	5073	8 12	4 09 52.011			236 18 16.58	37 03 58.9		229304
00866	CHINA LAKE C, CAL	5073	8 12	4 09 53.011			235 44 44.15	36 48 30.1		229304
00867	CHINA LAKE C, CAL	5073	8 12	4 09 54.011			235 07 15.18	37 00 28.2		229304
00868	CHINA LAKE C, CAL	5073	8 12	4 09 55.011			234 54 12.34	37 17 11.7		229304
00869	CHINA LAKE C, CAL	5073	8 12	4 09 56.011			234 39 49.10	37 31 19.2		229304
00870	CHINA LAKE C, CAL	5073	8 12	4 09 57.011			234 05 51.62	37 29 37.8		229304
00871	CHINA LAKE C, CAL	5073	8 12	4 09 58.011			233 45 18.61	37 42 16.2		229304
00872	CHINA LAKE C, CAL	5073	8 12	4 09 59.011			233 36 08.90	37 54 38.3		229304
00873	CHINA LAKE C, CAL	5073	8 12	4 10 00.011			232 55 32.56	38 02 33.5		229304
00874	CHINA LAKE C, CAL	5073	8 12	4 10 01.011			232 32 35.12	38 09 50.8		229304
00875	CHINA LAKE C, CAL	5073	8 12	4 10 02.011			231 50 18.61	38 15 52.0		229304
00876	CHINA LAKE C, CAL	5073	8 12	4 10 03.011			231 24 32.86	38 26 05.1		229304
00877	CHINA LAKE C, CAL	5073	8 12	4 10 04.011			230 50 46.83	39 04 40.0		229304
00878	CHINA LAKE C, CAL	5073	8 12	4 10 05.011			230 39 56.95	39 20 20.0		229304
00879	CHINA LAKE C, CAL	5073	8 12	4 10 06.011			230 02 28.78	39 18 46.9		229304
00880	CHINA LAKE C, CAL	5073	8 12	4 10 13.011			226 56 44.61	39 58 32.2		229304
00881	CHINA LAKE C, CAL	5073	8 12	4 10 14.011			226 18 54.24	40 12 01.3		229304
00882	CHINA LAKE C, CAL	5073	8 12	4 10 15.011			225 51 36.49	40 17 16.0		229304
00883	CHINA LAKE C, CAL	5073	8 12	4 10 16.011			225 16 43.43	40 25 28.2		229304
00884	CHINA LAKE C, CAL	5073	8 12	4 10 17.011			224 48 10.08	40 36 59.8		229304
00885	CHINA LAKE C, CAL	5073	8 12	4 10 18.011			224 28 45.48	40 42 33.1		229304
00886	CHINA LAKE C, CAL	5073	8 12	4 10 19.011			223 51 01.82	40 51 53.3		229304
00887	CHINA LAKE C, CAL	5073	8 12	4 10 25.011			220 45 25.52	41 31 59.6		229304
00888	CHINA LAKE C, CAL	5073	8 12	4 10 26.011			220 08 14.63	41 40 31.3		229304
00889	CHINA LAKE C, CAL	5073	8 12	4 10 27.011			219 25 54.84	41 53 43.6		229304
00890	CHINA LAKE C, CAL	5073	8 12	4 10 28.011			218 52 44.48	42 04 14.9		229304
00891	CHINA LAKE C, CAL	5073	8 12	4 10 29.011			218 33 02.97	42 24 38.6		229304
00892	CHINA LAKE C, CAL	5073	8 12	4 10 30.011			217 31 22.08	42 22 11.4		229304
00893	CHINA LAKE C, CAL	5073	8 12	4 10 31.011			217 01 16.40	42 38 33.4		229304
00894	CHINA LAKE C, CAL	5073	8 12	4 10 32.011			216 24 22.69	42 36 46.7		229304
00895	CHINA LAKE C, CAL	5073	8 12	4 10 33.011			215 55 54.84	42 35 35.2		229304
00896	CHINA LAKE C, CAL	5073	8 12	4 10 34.011			215 32 03.06	42 48 38.9		229304
00897	CHINA LAKE C, CAL	5073	8 12	4 10 35.011			215 27 15.86	42 57 53.1		229304
00898	CHINA LAKE C, CAL	5073	8 12	4 10 36.011			214 51 55.76	43 13 43.9		229304
00899	CHINA LAKE C, CAL	5073	8 12	4 10 37.011			213 48 37.50	43 16 26.7		229304
00900	CHINA LAKE C, CAL	5073	8 12	4 10 38.011			213 18 31.54	43 19 18.0		229304
00901	CHINA LAKE C, CAL	5073	8 12	4 10 39.011			212 51 45.14	43 18 27.2		229304
00902	CHINA LAKE C, CAL	5073	8 12	4 10 40.011			212 14 35.56	43 28 56.4		229304
00903	CHINA LAKE C, CAL	5073	8 12	4 10 41.011			211 33 51.23	43 33 57.6		229304
00904	CHINA LAKE C, CAL	5073	8 12	4 10 42.011			211 06 02.09	43 46 34.9		229304
00905	CHINA LAKE C, CAL	5073	8 12	4 10 43.011			210 23 46.11	44 00 17.0		229304
00906	CHINA LAKE C, CAL	5073	8 12	4 10 44.011			210 00 19.98	44 02 58.0		229304
00907	CHINA LAKE C, CAL	5073	8 12	4 10 45.011			209 43 30.26	44 15 07.7		229304
00908	CHINA LAKE C, CAL	5073	8 12	4 10 46.011			209 03 30.07	44 25 09.2		229304
00909	CHINA LAKE C, CAL	5073	8 12	4 10 47.011			208 38 45.59	44 32 03.8		229304
00910	CHINA LAKE C, CAL	5073	8 12	4 10 48.011			207 57 32.90	44 32 26.1		229304
00911	CHINA LAKE C, CAL	5073	8 12	4 10 49.011			207 24 31.20	44 23 25.6		229304
00912	CHINA LAKE C, CAL	5073	8 12	4 11 04.011			198 05 55.12	44 31 43.1		229304
00913	CHINA LAKE C, CAL	5073	8 12	4 11 05.011			197 28 15.91	44 28 28.3		229304
00914	CHINA LAKE C, CAL	5073	8 12	4 11 06.011			196 55 36.80	44 28 42.3		229304
00915	CHINA LAKE C, CAL	5073	8 12	4 11 07.011			196 17 21.38	44 34 39.5		229304
00916	CHINA LAKE C, CAL	5073	8 12	4 11 08.011			195 51 38.77	44 36 25.1		229304
00917	CHINA LAKE C, CAL	5073	8 12	4 11 09.011			195 23 35.92	44 29 16.3		229304
00918	CHINA LAKE C, CAL	5073	8 12	4 11 10.011			194 57 21.86	44 27 16.2		229304
00919	CHINA LAKE C, CAL	5073	8 12	4 11 11.011			194 22 31.39	44 22 31.2		229304
00920	CHINA LAKE C, CAL	5073	8 12	4 11 12.011			193 49 03.23	44 17 19.0		229304

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00921	CHINA LAKE C, CAL	5073	8 12	4 11 15.011			191 02 41.36	44 43 20.0		229304
00922	CHINA LAKE C, CAL	5073	8 12	4 11 16.011			190 29 18.62	44 43 51.7		229304
00923	CHINA LAKE C, CAL	5073	8 12	4 11 17.011			189 54 59.38	44 46 26.8		229304
00924	CHINA LAKE C, CAL	5073	8 12	4 11 18.011			189 31 48.84	44 44 21.0		229304
00925	CHINA LAKE C, CAL	5073	8 12	4 11 19.011			188 51 53.12	44 40 42.1		229304
00926	CHINA LAKE C, CAL	5073	8 12	4 11 20.011			188 25 29.96	44 38 30.3		229304
00927	CHINA LAKE C, CAL	5073	8 12	4 11 21.011			187 46 27.54	44 23 32.5		229304
00928	CHINA LAKE C, CAL	5073	8 12	4 11 22.011			187 33 23.70	44 28 55.5		229304
00929	CHINA LAKE C, CAL	5073	8 12	4 11 23.011			187 09 21.88	44 28 10.1		229304
00930	CHINA LAKE C, CAL	5073	8 12	4 11 24.011			186 19 21.04	44 23 24.1		229304
00931	CHINA LAKE C, CAL	5073	8 12	4 11 25.011			186 12 59.97	44 33 45.3		229304
00932	CHINA LAKE C, CAL	5073	8 12	4 11 26.011			185 47 42.86	44 38 32.0		229304
00933	CHINA LAKE C, CAL	5073	8 12	4 11 27.011			185 11 18.83	44 28 43.6		229304
01128	WHITTIER, CAL.	8566	8 12	4 11 31.6			180 00	51 54		845301
00934	CHINA LAKE C, CAL	5073	8 12	4 11 33.011			181 26 39.72	43 57 15.2		229304
00935	CHINA LAKE C, CAL	5073	8 12	4 11 34.011			180 37 16.37	43 47 10.9		229304
01134	CHINA LAKE, CAL.	0098	8 12	4 11 36.0			180 00	42 06		641302
00936	CHINA LAKE C, CAL	5073	8 12	4 11 36.011			179 46 32.77	43 47 53.5		229304
00937	CHINA LAKE C, CAL	5073	8 12	4 11 53.011			171 22 13.59	41 54 07.3		229304
00938	CHINA LAKE C, CAL	5073	8 12	4 11 54.011			170 53 37.52	41 42 53.7		229304
00939	CHINA LAKE C, CAL	5073	8 12	4 11 55.011			170 23 20.75	41 40 25.7		229304
00940	CHINA LAKE C, CAL	5073	8 12	4 11 56.011			169 51 43.76	41 13 02.7		229304
00941	CHINA LAKE C, CAL	5073	8 12	4 11 57.011			169 36 21.08	41 12 44.1		229304
00942	CHINA LAKE C, CAL	5073	8 12	4 11 58.011			169 25 48.88	41 07 30.2		229304
00943	CHINA LAKE C, CAL	5073	8 12	4 11 59.011			169 03 37.19	41 01 02.2		229304
00944	CHINA LAKE C, CAL	5073	8 12	4 12 00.011			168 44 53.03	41 00 45.7		229304
00945	CHINA LAKE C, CAL	5073	8 12	4 12 10.011			164 37 40.82	39 41 02.3		229304
00946	CHINA LAKE C, CAL	5073	8 12	4 12 11.011			164 04 04.69	39 29 54.7		229304
00947	CHINA LAKE C, CAL	5073	8 12	4 12 12.011			163 43 37.38	39 29 27.9		229304
00948	CHINA LAKE C, CAL	5073	8 12	4 12 13.011			163 14 40.14	39 21 08.8		229304
00949	CHINA LAKE C, CAL	5073	8 12	4 13 21.011			145 16 42.09	29 39 13.2		229304
00950	CHINA LAKE C, CAL	5073	8 12	4 13 22.011			145 15 46.89	29 22 51.8		229304
00951	CHINA LAKE C, CAL	5073	8 12	4 13 23.011			144 53 22.01	29 20 42.8		229304
00952	CHINA LAKE C, CAL	5073	8 12	4 13 24.011			144 30 36.65	29 12 15.0		229304
00953	CHINA LAKE C, CAL	5073	8 12	4 13 25.011			144 04 16.57	29 17 52.0		229304
00954	CHINA LAKE C, CAL	5073	8 12	4 13 26.011			144 05 13.27	28 56 04.4		229304
00955	CHINA LAKE C, CAL	5073	8 12	4 13 27.011			143 49 55.02	28 56 08.4		229304
00956	CHINA LAKE C, CAL	5073	8 12	4 13 28.011			144 05 57.52	28 47 30.8		229304
01129	WHITTIER, CAL.	8566	8 12	4 13 50.0			135 00	28 36		845301
00957	CHINA LAKE C, CAL	5073	8 12	4 13 50.011			140 19 35.20	26 11 58.0		229304
00958	CHINA LAKE C, CAL	5073	8 12	4 13 52.011			139 48 01.52	26 01 01.4		229304
00959	CHINA LAKE C, CAL	5073	8 12	4 13 53.011			139 46 13.75	26 02 11.2		229304
00960	CHINA LAKE C, CAL	5073	8 12	4 13 54.011			139 40 50.49	25 54 40.7		229304
00961	CHINA LAKE C, CAL	5073	8 12	4 13 55.011			139 25 17.74	25 53 21.7		229304
00694	MAUI-BN, HAWAII	9012	8 12	6 30 00.766	21 40 18	60 28				434013
00795	OLIFNTSFNTN-BN, S.AF	9002	8 13	1 38 20.500	23 58 24	-32 33				434023
00701	AREQUIPA-BN, PERU	9007	8 13	8 33 30.370	23 19 18	-45 18				434023
00698	WOOMERA-BN, AUSTR.	9003	8 13	20 14 24.400	0 24 24	-33 51				434023
00699	WOOMERA-BN, AUSTR.	9003	8 13	20 22 07.162	2 59 24	-39 29				434023
00700	WOOMERA-BN, AUSTR.	9003	8 13	20 35 42.675	6 32 00	-26 16				434023
01136	CINCINNATI, OHIO	0050	8 14	2 21 41.5	17 37 01	-31 16 12				845001
00697	OLIFANTSFNTN-BN,S.AF	9002	8 14	3 14 11.700	2 30 42	-46 40				434023
00702	AREQUIPA-BN, PERU	9007	8 14	7 35 40.751	0 20 00	-47 57				434023
00704	WOOMERA-BN, AUSTR.	9003	8 14	19 16 30.346	1 05 06	-36 21				434023
00710	MAUI-BN, HAWAII	9012	8 15	5 59 22.268	17 24 00	79 40				434013
00711	MAUI-BN, HAWAII	9012	8 15	6 00 32.258	20 44 48	63 00				434013
00712	MAUI-BN, HAWAII	9012	8 15	6 02 14.602	21 47 06	31 37				434013
00708	AREQUIPA-BN, PERU	9007	8 15	9 07 59.776	1 27 54	-57 30				434023
00705	WOOMERA-BN, AUSTR.	9003	8 15	18 15 51.246	0 53 36	-33 26				434023
00703	OLIFNTSFNTN-BN, S.AF	9002	8 16	1 08 07.100	0 16 00	-38 46				434023
00709	AREQUIPA-BN, PERU	9007	8 16	8 04 25.215	0 02 18	-54 20				434023
00706	WOOMERA-BN, AUSTR.	9003	8 16	17 16 48.955	1 12 48	-29 52				434023
00707	WOOMERA-BN, AUSTR.	9003	8 16	19 48 53.791	2 28 42	-39 39				434023
00715	OLIFANTSFNTN-BN,S.AF	9002	8 17	2 42 43.700	2 32 36	-47 13				434023
00826	AREQUIPA-BN, PERU	9007	8 17	9 39 55.914	2 51 18	-58 02				434023
00716	WOOMERA-BN, AUSTR.	9003	8 17	18 42 46.604	0 09 12	-35 57				434023
00717	OLIFANTSFNTN-BN,S.AF	9002	8 18	1 38 26.700	0 51 54	-46 04				434023
00721	WOOMERA-BN, AUSTR.	9003	8 18	17 43 32.162	0 25 12	-35 02				434023
00720	WOOMERA-BN, AUSTR.	9003	8 18	20 19 53.157	3 18 54	-35 57				434023
00718	OLIFANTSFNTN-BN,S.AF	9002	8 19	0 39 05.700	1 14 48	-44 17				434023
00719	OLIFANTSFNTN-BN,S.AF	9002	8 19	3 10 51.300	2 18 36	-46 03				434023
00735	AREQUIPA-BN, PERU	9007	8 19	7 34 41.125	0 52 00	-59 09				434023
00736	AREQUIPA-BN, PERU	9007	8 19	10 09 03.844	3 56 00	-55 30				434023
00748	WOOMERA-BN, AUSTR.	9003	8 19	19 16 38.247	2 15 54	-39 32				434023
00747	OLIFNTSFNTN-BN, S.AF	9002	8 20	2 09 28.700	1 54 00	-48 03				434023
00749	AREQUIPA-BN, PERU	9007	8 20	9 05 50.281	1 47 30	-59 21				434023
00751	MAUI-BN, HAWAII	9012	8 20	5 59 30.866	16 59 06	31 28				434013
00750	WOOMERA-BN, AUSTR.	9003	8 20	18 13 43.711	1 05 06	-40 01				434023
00752	OLIFANTSFNTN-BN,S.AF	9002	8 21	1 06 14.100	0 24 42	-47 59				434023
00753	OLIFANTSFNTN-BN,S.AF	9002	8 21	3 43 51.800	3 59 00	-35 44				434023
00754	AREQUIPA-BN, PERU	9007	8 21	8 03 34.100	0 57.54	-60 28				434023
00762	WOOMERA-BN, AUSTR.	9003	8 21	19 46 43.700	2 48 06	-35 12				434023
00755	OLIFNTSFNTN-BN, S.AF	9002	8 22	2 40 39.200	2 54 18	-43 49				434023

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00764	MAUI-BN, HAWAII	9012	8 22	6 28 32.529	16 05 06	-20 59				434013
00756	OLIFNTSFNTN-BN, S.AF	9002	8 23	1 35 44.700	0 48 54	-49 06				434023
00765	MAUI-BN, HAWAII	9012	8 23	5 29 56.129	16 09 18	14 17				434013
00763	AREQUIPA-BN, PERU	9007	8 23	8 35 18.913	2 23 48	-58 54				434023
00761	WOOMERA-BN, AUSTR.	9003	8 23	17 41 52.795	0 48 12	-41 00				434023
00758	WOOMERA-BN, AUSTR.	9003	8 23	20 09 28.661	0 46 18	-32 28				434023
00759	WOOMERA-BN, AUSTR.	9003	8 23	20 16 54.081	3 14 18	-26 46				434023
00760	WOOMERA-BN, AUSTR.	9003	8 23	20 21 30.512	4 28 36	-19 10				434013
00757	OLIFNTSFNTN-BN, S.AF	9002	8 24	3 10 28.600	3 12 06	-36 27				434013
00831	VILLA DOLORES-BN,ARG	9011	8 24	7 34 55.124	1 15 36	-38 58				434023
00767	WOOMERA-BN, AUSTR.	9003	8 24	19 14 12.306	2 36 00	-33 50				434023
00766	OLIFANTSFNTN-BN,S.AF	9002	8 25	2 03 49.700	0 32 24	-46 17				434023
00778	MAUI-BN, HAWAII	9012	8 25	5 58 27.462	14 48 00	-23 22				434023
00768	WOOMERA-BN, AUSTR.	9003	8 25	18 11 49.688	1 53 18	-39 10				434023
00769	OLIFANTSFNTN-BN,S.AF	9002	8 26	1 04 25.600	0 46 42	-49 58				434023
00770	OLIFANTSFNTN-BN,S.AF	9002	8 26	3 41 13.500	3 56 42	-21 15				434013
00772	WOOMERA-BN, AUSTR.	9003	8 26	17 12 34.401	1 45 48	-39 47				434023
00773	WOOMERA-BN, AUSTR.	9003	8 26	19 31 07.386	22 16 00	-27 22				434023
00774	WOOMERA-BN, AUSTR.	9003	8 26	19 44 11.841	2 48 36	-24 25				434023
00775	WOOMERA-BN, AUSTR.	9003	8 26	19 45 52.473	3 19 00	-21 33				434013
00776	AREQUIPA-BN, PERU	9007	8 27	9 37 49.310	3 53 18	-39 02				434023
00777	WOOMERA-BN, AUSTR.	9003	8 27	18 41 55.450	2 03 30	-32 05				434023
01184	AREQUIPA-BN, PERU	9007	8 28	8 34 33.971	3 06 12	-49 45				434023
00785	WOOMERA-BN, AUSTR.	9003	8 28	17 40 10.873	1 13 30	-38 13				434023
00783	WOOMERA-BN, AUSTR.	9003	8 28	20 14 08.356	3 01 30	-12 23				434013
00781	OLIFANTSFNTN-BN,S.AF	9002	8 29	0 34 56.800	1 46 06	-47 42				434023
00782	OLIFANTSFNTN-BN,S.AF	9002	8 29	3 07 33.900	2 55 30	-22 50				434013
00786	AREQUIPA-BN, PERU	9007	8 29	7 32 18.858	2 23 18	-58 18				434023
00787	AREQUIPA-BN, PERU	9007	8 29	10 07 37.962	3 50 00	-26 20				434023
00779	OLIFANTSFNTN-BN,S.AF	9002	8 30	2 04 38.600	2 01 30	-34 11				434023
00780	OLIFANTSFNTN-BN,S.AF	9002	8 31	1 03 36.700	1 37 00	-41 58				434023
00788	WOOMERA-BN, AUSTR.	9003	8 31	19 41 23.666	2 31 00	- 9 07				434013

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00101	AREQUIPA-BN, PERU	9007	5 14	7 00 37.354	19 34 30	-48 16				434023
00141	VILLA DOLORES-BN,ARG	9011	5 16	10 06 32.680	20 32 06	-35 00				434023
00164	MAUI-BN, HAWAII	9012	5 20	8 07 36.278	14 40 18	23 07				434013
00150	AREQUIPA-BN, PERU	9007	5 22	9 03 21.290	20 05 24	-50 19				434023
00161	VILLA DOLORES-BN,ARG	9011	5 23	7 59 24.241	18 27 18	-36 29				434023
00522	OLIFNTSFNTN-BN, S.AF	9002	6 01	2 04 26.908	20 45 24	-13 48				434013
00184	AREQUIPA-BN, PERU	9001	6 01	9 01 17.254	20 45 42	-23 33				434023
00190	OLIFANTSFNTN-BN,S.AF	9002	6 02	0 58 26.999	20 17 06	-30 28				434023
00191	OLIFANTSFNTN-BN,S.AF	9002	6 02	3 33 47.599	19 26 36	2 57				434013
00204	AREQUIPA-BN, PERU	9007	6 05	7 27 23.228	20 17 00	-34 44				434023
00205	AREQUIPA-BN, PERU	9007	6 05	10 01 50.000	20 42 24	8 23				434013
00219	AREQUIPA-BN, PERU	9007	6 08	9 30 22.690	20 10 54	11 34				434013
00240	ORGAN PASS-BN, N.M.	9001	6 12	10 31 54.801	22 34 18	-18 47				434013
00251	SHIRAZ-BN, IRAN	9008	6 13	23 32 03.252	18 23 48	38 48				434013
00252	SHIRAZ-BN, IRAN	9008	6 13	23 35 18.351	20 33 36	43 51				434013
00257	CURACAO-BN, N.W.I.	9009	6 16	9 09 39.087	22 15 48	29 00				434013
00345	PRETORIA, S.AFR.	0405	6 16	17 26 09.2			179 36	41 12		845301
00261	AREQUIPA-BN, PERU	9007	6 16	23 52 08.427	11 22 00	-84 20				434023
00272	AREQUIPA-BN, PERU	9007	6 20	7 35 28.791	18 43 36	35 47				434013
00280	MAUI-BN, HAWAII	9012	6 24	13 06 23.415	21 30 54	29 15				434013
00301	MAUI-BN, HAWAII	9012	6 25	14 37 40.041	20 34 36	38 28				434013
00296	CURACAO-BN, N.W.I.	9009	6 26	23 47 37.915	13 56 30	- 1 13				434013
00298	JUPITER-BN, FLA.	9010	6 27	5 25 06.238	20 07 36	-15 08				434013
00299	JUPITER-BN, FLA.	9010	6 27	8 00 13.524	20 15 18	19 00				434013
00292	WOOMERA-BN, AUSTR.	9003	6 27	9 32 58.458	9 33 48	-52 58				434023
00316	ADELAIDE, AUSTR.	0600	6 30	9 04 26			350	68		845301
00317	ADELAIDE, AUSTR.	0600	6 30	9 04 31			0	66		845301

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00169	JUPITER-BN, FLA.	9010	7 01	4 34 09.865	14 54 30	63 32				434013
00175	MAUI-BN, HAWAII	9012	7 01	6 37 28.942	11 38 00	56 30				434013
00170	JUPITER-BN, FLA.	9010	7 01	6 58 08.778	19 16 54	34 26				434013
00172	ORGAN PASS-BN, N.M.	9001	7 01	9 13 24.627	19 44 42	6 31				434013
00176	JUPITER-BN, FLA.	9010	7 02	2 49 04.241	16 07 00	71 27				434013
00173	ORGAN PASS-BN, N.M.	9001	7 02	7 26 55.495	18 37 18	29 04				434013
00177	JUPITER-BN, FLA.	9010	7 02	7 35 07.485	20 18 18	11 40				434013
00174	ORGAN PASS-BN, N.M.	9001	7 02	9 50 07.379	19 23 30	- 4 15				434013
00178	NAINI TAL-BN, INDIA	9006	7 02	16 12 51.370	13 25 54	52 25				434013
00180	SACRAMENTO, CAL.	8517	7 03	5 37 40.9			180 00	49 39		641301
00183	MAUI-BN, HAWAII	9012	7 04	6 05 15.992	10 56 00	65 40				434013
00188	SACRAMENTO, CAL.	8517	7 04	6 14 03.1			180 00	57 17		641301
00189	SACRAMENTO, CAL.	8517	7 04	6 14 04.1	16 53 41	5 53				641041
00184	MAUI-BN, HAWAII	9012	7 04	10 08 52.663	17 41 00	55 12				434013
00179	NAINI TAL-BN, INDIA	9006	7 04	15 04 40.736	15 30 24	52 21				434013
00185	VILLA DOLORES-BN,ARG	9011	7 06	10 26 01.704	1 25 54	-11 23				434013
00193	ALAMOGORDO, N.M.	0102	7 07	3 24 38			0	86 18		845301
00187	SAN FERNANDO-BN, SP.	9004	7 07	21 17 44.600	16 11 54	15 15				434013
00186	SAN FERNANDO-BN, SP.	9004	7 08	21 53 57.600	16 38 06	14 45				434013
00191	ORGAN PASS-BN, N.M.	9001	7 11	3 27 52.400	17 49 48	49 31				434013
00192	VILLA DOLORES-BN,SP.	9011	7 11	8 37 53.969	0 17 06	- 1 52				434013
00194	SAN FERNANDO-BN, SP.	9004	7 14	20 48 56.800	15 52 06	6 43				434013
00195	ORGAN PASS-BN, N.M.	9001	7 16	4 07 30.500	16 34 12	14 45				434013
00196	VILLA DOLORES-BN,ARG	9011	7 16	6 55 02.847	1 17 48	- 6 47				434013
00197	WOOMERA-BN, AUSTR.	9003	7 16	20 30 00.363	0 14 36	-34 03				434023
00198	AREQUIPA-BN, PERU	9007	7 17	9 47 32.352	21 56 00	-42 45				434023
00200	AREQUIPA-BN, PERU	9007	7 18	10 28 18.597	1 14 12	-55 07				434023
00199	ORGAN PASS-BN, N.M.	9001	7 19	3 34 52.380	15 48 42	6 59				434013
00201	AREQUIPA-BN, PERU	9007	7 21	9 54 18.404	1 23 18	-64 37				434023
00202	JUPITER-BN, FLA.	9010	7 23	1 23 17.572	14 49 24	29 35				434013
00206	SHIRAZ-BN, IRAN	9008	7 23	18 08 48.663	17 56 24	48 12				434013
00207	SHIRAZ-BN, IRAN	9008	7 23	18 09 04.077	18 21 54	48 18				434013
00203	OLIFANTSFNTN-BN,S.AF	9002	7 24	2 38 21.4	23 29 42	-52 02				434023
00204	MAUI-BN, HAWAII	9012	7 24	6 26 41.866	18 23 42	44 19				434013
00205	MAUI-BN, HAWAII	9012	7 27	5 54 20.431	17 45 48	28 03				434013
00210	MAUI-BN, HAWAII	9012	7 28	6 30 05.118	15 23 36	- 8 47				434013
00208	CURACAO-BN, N.W.I.	9009	7 29	0 22 33.035	18 11 48	42 48				434013
00209	WOOMERA-BN, AUSTR.	9003	7 29	18 49 52.809	23 37 48	-39 23				434023
00213	VILLA DOL.-BN, ARG.	9011	7 30	8 03 12.369	22 37 06	-39 05				434023
00212	WOOMERA-BN, AUSTR.	9003	7 30	19 26 33.788	23 52 48	-37 59				434023
00211	OLIFNTSFNTN-BN, S.AF	9002	7 31	2 07 37.8	0 43 12	-52 26				434023
00214	OLIFNTSFNTN-BN, S.AF	9002	8 01	2 45 07.4	1 18 42	-46 35				434023
00217	MAUI-BN, HAWAII	9012	8 01	6 33 30.687	13 54 42	-36 33				434023
00215	CURACAO-BN, N.W.I.	9009	8 02	0 25 54.575	14 46 42	-15 18				434013
00216	WOOMERA-BN, AUSTR.	9003	8 03	19 30 03.587	0 20 00	-25 37				434023
00218	OLIFNTSFNTN-BN, S.AF	9002	8 04	2 10 59.000	0 57 48	-41 20				434023
00219	WOOMERA-BN, AUSTR.	9003	8 04	20 06 55.388	0 34 12	-14 07				434013
00220	CURACAO-BN, N.W.I.	9009	8 04	23 53 52.061	15 01 42	-33 43				434023
00221	AREQUIPA-BN, PERU	9007	8 06	10 10 03.817	2 20 00	-23 30				434023
00222	OLIFNTSFNTN-BN, S.AF	9002	8 07	1 37 18.024	0 47 00	-38 11				434023
00223	AREQUIPA-BN, PERU	9007	8 07	8 20 52.993	1 54 36	-52 57				434023
00225	WOOMERA-BN, AUSTR.	9003	8 07	19 33 21.695	0 22 54	- 7 02				434013
00227	AREQUIPA-BN, PERU	9007	8 09	0 00 22.829	18 23 42	35 55				434013
00228	AREQUIPA-BN, PERU	9007	8 09	9 35 18.900	1 38 36	-20 00				434013
00226	WOOMERA-BN, AUSTR.	9003	8 09	18 24 58.281	1 07 24	- 6 30				434013

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00224	OLIFNTSFNTN-BN, S.AF	9002	8 10	3 29 02.500	0 44 42	7 03				434013
00229	AREQUIPA-BN, PERU	9007	8 11	8 24 27.043	1 34 30	-31 52				434023
00230	OLIFANTSFNTN-BN,S.AF	9002	8 12	2 15 56.536	23 39 12	- 5 01				434013
00231	AREQUIPA-BN, PERU	9007	8 12	9 00 54.000	0 59 30	-15 28				434013
00232	AREQUIPA-BN, PERU	9007	8 13	0 04 23.344	17 16 30	-21 29				434013
00233	AREQUIPA-BN, PERU	9007	8 15	23 31 13.204	15 28 36	-26 57				434023
00234	AREQUIPA-BN, PERU	9007	8 16	9 04 21.108	0 20 18	12 58				434013
00235	AREQUIPA-BN, PERU	9007	8 19	8 32 23.839	1 16 06	33 35				434013
00236	WOOMERA-BN, AUSTR.	9003	8 19	10 13 43.036	17 07 06	- 6 16				434013
00237	OLIFANTSFNTN-BN,S.AF	9002	8 20	17 30 37.300	18 00 48	-62 46				434023
00239	WOOMERA-BN, AUSTR.	9003	8 22	9 41 16.288	17 15 54	-19 43				434013
00240	WOOMERA-BN, AUSTR.	9003	8 23	10 17 16.258	16 43 24	-42 19				434023
00267	ORGAN PASS-BN, N.M.	9001	8 23	10 58 22.100	4 08 06	- 8 20				434013
00238	OLIFNTSFNTN-BN, S.AF	9002	8 23	16 57 25.100	15 57 42	-61 27				434023
00268	VILLA DOLORES-BN,ARG	9011	8 23	23 41 11.003	16 32 24	-36 52				434023
00241	OLIFANTSFNTN-BN,S.AF	9002	8 24	17 33 19.300	14 41 36	-72 44				434023
00242	MAUI-BN, HAWAII	9012	8 25	14 17 40.686	2 07 30	5 37				434013
00243	CURACAO-BN, N.W.I.	9009	8 27	8 42 31.253	0 33 24	31 48				434013
00244	WOOMERA-BN, AUSTR.	9003	8 27	10 21 01.735	17 45 12	-58 12				434023
00245	OLIFANTSFNTN-BN,S.AF	9002	8 27	17 01 08.100	16 27 12	-76 05				434023
00246	MAUI-BN, HAWAII	9012	8 28	13 43 23.527	1 41 48	9 25				434013
00247	OLIFANTSFNTN-BN,S.AF	9002	8 28	17 36 43.200	13 44 18	-70 27				434023
00248	OLIFANTSFNTN-BN,S.AF	9002	8 31	17 05 50.500	21 28 18	-64 04				434023
00249	VILLA DOLORES-BN,ARG	9011	8 31	23 48 17.694	17 39 48	-46 01				434023

1959 ADDENDA

OBS NO	STATION	STA NO	DATE	TIME	R. A.	DECL.	AZIMUTH	ALTITUDE	RANGE	INDEX
00078	AIKEN, S.C.	6023	4 10	1 39 54.4	9 23 00	35 44 24				000009

1959 CORRIGENDA

OBS NO	STATION	STA NO	DATE	TIME	R. A.	DECL.	AZIMUTH	ALTITUDE	RANGE	INDEX
00050	AREQUIPA-BN, PERU	9007	3 18	23 55 05.242	7 36 30	-10 35				434013
00126	SHIRAZ-BN, IRAN	9008	6 06	21 37 52.491	18 43 00	-10 58				434013

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