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LAST MODIFIED 1996 AUG05. IF YOU CITE THIS CATALOG USE THIS DATE** ADDITIONS
DELETIONS, AND CORRECTIONS WILL BE CONTINUING

CATALOG OF KNOWN AND PUTATIVE NUCLEAR EXPLOSIONS FROM UNCLASSIFIED SOURCES

Compiled by James E. Lawson Jr. (Jim), who is solely responsible for the
contents.

THIS CATALOG HAS A NEARLY COMPLETE LIST OF KNOWN TESTS. THERE ARE STILL
MANY TIMES, MAGNITUDES, LATITUDES, AND LONGITUDES TO BE FILLED IN. PLEASE
SEND ANY ADDITIONS, DELETIONS, CORRECTIONS, SUGGESTIONS TO:
jim@leonard.okgeosurvey1.gov. PLEASE CITE AN UNCLASSIFIED DOCUMENT WITH YOUR
SUGGESTIONS.

The following (alphabetical order) assisted: Shirley Jackson, Christi King
(who did most of the typing), Ruth King, Todd McCormick.

ACKNOWLEDGEMENTS AND DISCLAIMER

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Creek Nation summer program. Nothing in this catalog represents an opinion
of ARPA, or of any US Government agency, or of the Oklahoma Geological Survey,
or of any Oklahoma Government Agency, or of the Creek Nation.

THIS INFORMATION IS COMPILED FROM UNCLASSIFIED WIDELY ACCEPTED SOURCES. NO
INFORMATION REPRESENTS AN OFFICIAL OPINION OF THE OKLAHOMA GEOLOGICAL SURVEY.
ALTHOUGH THE OGS HAS RECORDED BODY AND SURFACE WAVES FROM MANY UNDERGROUND
BLASTS, NONE OF THE YIELDS GIVEN HERE WERE CALCULATED BY THE OGS.

In the headings:

LINE 1-EXISTS FOR ONLY SOME TESTS-----

COLUMNS 1-6:

DATE=date (UTC time) yyymmdd, yy=year-1900, mm=month, dd=day of month

COLUMNS 8-15: Time of blast in GMT until 1971 DEC31, in UTC starting 1972 JAN
01. GMT was Greenwich Mean Time (which is not correct to use after 1971 JAN01).
UTC is Universal Time Coordinated. The times are listed as hhmmss.d, where
hh=hour(0 through 23), mm=minute, ss=second, d=decisecond. Although it can't
be shown in this format, many US shot times have been released to the nearest
0.001 second.

COLUMN 16 Always # on Line 1 if Line 1 exists for the test

COLUMNS 17-44 Full name of test.

COLUMNS 46-53 Depth of burial in meters below ground surface (below water level for underwater tests). If figure is negative, it represents elevation above land surface (ending in L) or above sea level ending in S).

COLUMNS 55-80 Free format comments.

LINE 2-EXISTS FOR ALL TESTS-----

COLUMNS 1-6:

DATE=date (UTC time) yyymmdd, yy=year-1900, mm=month, dd=day of month

COLUMNS 8-15: Time of blast in GMT until 1971 DEC31, in UTC starting 1972 JAN 01. GMT was Greenwich Mean Time (which is not correct to use after 1971 JAN01). UTC is Universal Time Coordinated. The times are listed as hhmmss.d, where hh=hour(0 through 23), mm=minute, ss=second, d=decisecond. Although it can't be shown in this format, many US shot times have been released to the nearest 0.001 second.

COLUMNS 17-18:

TP=Testing Party: US=United States, GB=UK, CP=USSR, FR=France, IN=India

PC=People's Republic of China

IS=Israel, but the 790922 event is only putative

COLUMNS 19-21: Test or explosion site. Note that the UK Christmas Island site has been used for some US atmospheric tests. In exchange, the US has allowed the UK to conduct underground tests at the Nevada Test Site.

ANM= Alamogordo, New Mexico, USA (US atmospheric test)

HRJ= Hiroshima, Japan (US/warfare)

NGJ= Nagasaki, Japan (US/warfare)

BKN= Bikini (US atmospheric tests)

ENW= Enwetak (US atmospheric tests)

CNV= Centra Nevada (US underground test)

NTS= Nevada Test Site, Nevada, USA (US atmospheric and underground and
UK underground tests)

FMT= Farmington, Colorado (US underground natural gas stimulation test)

MBI= Monte Bello Islands, Australia (UK atmospheric test)

EMU= Emu Field, 480 kilometers SW of Woomera, Australia (UK atmospheric tests)

PAC= Various Pacific Ocean sites

MAR= Maralinga, Australia (UK atmospheric tests)

CHR= Christmas Island (UK and US atmospheric tests)

NZ = Novaya Zemlya, USSR (USSR atmospheric and underground tests)

KTS= Eastern Kazakh or Semipalitinsk test site, USSR (USSR atmospheric and
underground tests)

REG= Reggane Proving Grounds, Algeria (French Atmospheric Tests)

ECK= Ecker, Algeria (French Underground tests)

CLS= Carlsbad, New Mexico, USA (US underground test)

JON= Johnston Island (US atmospheric tests)

FAL= Fallon, Nevada, USA (US underground test)

LNR= Lop Nor, PRC (PRC atmospheric and underground tests)

AMC= Amchitka Island, Aleutians, Alaska, USA (US underground tests)

MUR= Muruora Is. (French atmospheric and underground tests)

FAN= Fangataufa Is. (French atmospheric and underground tests)

HTB= Hattiesburg, Mississippi, USA (US underground tests)

GRV= Grand Valley, Colorado, USA (US natural gas stimulation)

RAJ= Rajasthan Desert, India (Indian underground test)

IS?IN= Indian Ocean (putative Israeli Test)

RFL= Rifle, Colorado, USA (3x33kt simultaneous gas stimulation shots)

SAT= South Atlantic Ocean (three US tests, rocket to 482 kilometers altitude)

MAL= Malden Island (UK atmospheric tests)

KPY= Kapustin Yar (USSR)
SYS= Sary Shagan (USSR)

USSR sites other than NZ and KTS. A large number of blasts, some or many of which were for engineering purposes (possibly similar to US Plowshare tests) were fired underground at many locations. Latitude and Longitude for most of these are given in the tables. These tests, US plowshare tests, and the one Indian test, were announced by the testing parties to be PNEs (Peaceful Nuclear Explosions).

COLUMN 22: Test subsite

NTS: P= Pahute Mesa
Y= Yucca Mountain
F= Frenchman Flat
B= Buckboard Mesa
KTS: B= Balapan or Shagan River
D= Degelen Mountain
M= Murzhik
NZ: N= (NTS) Northern Island
S= Southern Island

COLUMNS 24-27:

TYPE: AIRD=airdrop
ART =artillery shell
ATMO=in or above the atmosphere
BALN=balloon
BARG=barge
CRAT=crater
RC = "roman candle"=open vertical shaft
ROCK=rocket
SHFT=stemmed vertical shaft
SS1 =simultaneous shot in shaft 1
SS2 =simultaneous shot in shaft 2
SSn =simultaneous shot in shaft n
(If several simultaneous tests were in the same shaft [usually at different depths] they will all be listed SS1. If three were shot simultaneously in three separate shafts they will be SS1, SS2, and SS3).
SURF=surface (unknown but probably not airdropped, near surface, includes tower and barge)
TOWR=tower
TUNN=tunnel
UNDW=underwater

COLUMNS 29-31: Seismic body (P) wave magnitude, mb. Sources in this order of preference. ISC mb, if ISC mb not available NEIS mb, if no mb available an ML from PAS or BRK may be used. If the test has known multiple explosions, mb refers to the entire test.

COLUMNS 33-35: Seismic surface wave magnitude, Ms. If the test has known multiple explosions, Ms refers to the entire test.

COLUMNS 37-41: Explosive Yield in Kilotons. NOTE decimal points are not all lined up vertically. This could be a problem in any machine processing as could <, >, LOW, HIGH, -, SLIGHT, FIZZ.
Unless there is a single number without a <, >, or - , assume the yield is unknown and very approximate.
FIZZ=fizzle or failure with extremely low yield. F followed by a number, eg F300, is a test which had a smaller yield than expected. Apparently some fizzles were two-stage devices in which the fusion stage produced little or no yield.

COLUMNS 43-49: Latitude in degrees and decimals of a degree. Although it can't be shown in this format, many US shots have coordinates released to 0.1 or 0.01 seconds (0.00003 or 0.000003 degrees).

COLUMNS 51-58: Longitude in degrees and decimals of a degree. See comments about US shots under latitude.

COLUMNS 60-61:

PU=Purpose: WR=weapons related, **=war, WE=weapons effects, SF=safety
PS=Plowshare (US PNE engineering shots)
VU=US Vela Uniform-directed toward seismic detection of underground shots

COLUMNS 62-63:

DT=Device Type: U=fission only with primarially U235, or boosted or two stage with primarially U235 primary (trigger, pit)
P=fission only with primarially Pu239, or boosted or two stage with primarially Pu239 primary (trigger, pit)
I=fission only, fission material mix unknown
B="boosted", some fusion yield, perhaps from tritium although the boost is probably mainly to increase the fission yield.
2=two stage, fusion second stage, possibly many or most of these will have a U238 fission "third" stage.

Zero yield omitted: USDOE "Announced Nuclear Tests" with zero yield are not included in this nuclear EXPLOSION catalog. Some of these are described as being safety or storage-transportation tests.

COLUMNS 64-67: For underground tests: Rock type at device emplacement point.

GR= granite
QP= quartz porphyrite
SA= sandstone
AL= aleurolite (siltstone)
PO= porphyryte
QS= quartz syneite
GS= gritstone
AR= argillite (mudstone)
CO= conglomerate
TS= tuffaceous sandstone
SL= salt

COLUMN 68: += device emplaced above water table
-= device emplaced below water table

COLUMN 69-76:

NAME=Name of explosion. All US announced, and a few French, and all UK underground tests have a name. In early US atmospheric testing some names were reused. When the names are too long for the table, any space is first dropped, and second, the name is truncated, not abbreviated. A few words appear often enough as the component of a name that they are abbreviated by a lower case letter as follows:

g=GERBOISE, m=MIST, y=MISTY, p=PRIME, d=DIAMOND
A * in the first column of the name indicates a putative nuclear test (ie. not announced or acknowledged by the PRESUMED testing party).
A second * in the name column indicates some doubt about whether the event was a nuclear explosion. A number of US tests listed only by N (NRDC), which have ** in the name column, may be cavity collapses from previous tests, or earthquakes, but they may include some unannounced nuclear explosions.

COLUMNS 77-80: Generalized References

E= United States Department of Energy
 N= Natural Resources Defense Council
 B= Bolt "The Parted Veil: Nuclear Explosions and Earthquakes"
 A= Bocharov, V. S., S. A. Zelentsov, and V. N. Mikhailov.
 Characteristics of 96 underground nuclear explosions at the
 Semipalatinsk test site, Atomnaya Energiya, 67, (3), 1989.
 D= Dominion of New Zealand, Dept. of Scientific and Industrial Research
 I= International Seismological Centre
 C= United States Advanced Research Projects Agency/ Nuclear Monitoring
 Research Office/ Center for Seismic Studies
 L= U.S. Geological Survey, National Earthquake Information Service
 S= Seismic Service of the Russian Federation Ministry of Defense
 U= United Kingdom Atomic Weapons Research Establishment
 F= Ronald Walters and Kenneth S. Zinn, The September 22, 1979 Mystery
 Flash: Did South Africa Detonate a Nuclear Bomb? Report of the
 Washington Office on Africa Educational Fund, May 21, 1985.
 n= ARPA/NMRO/NORwegianSeismicARray (NORSAR)
 G= GSETT3-Group of Scientific Experts Technical Test 3
 REB-Reviewed Event Bulletin from IDC-International Data Center
 Z= Australian Geological Survey Organization Database of Nuclear
 Explosions http://www.agso.gov.au/information/structure/isd/database/nukexp_query.html

DATE yymmdd	TIME hhmmss.	TP SITE	TYPE	MAG mb	YIELD kt.	LAT deg	LON deg	PU DT	ROCKW tNAME	SRC
450716		USANM	TOWR		21	33.675N	106.475W	WRP	TRINITY	EN
450805		USHRJ	AIRD		15			* *U	LITTLEBOEN	
450809		USNGJ	AIRD		21			* *P	FAT MAN	EN
460630		USBKN	AIRD		21	11.000N	165.000E	WEP	ABLE	EN
460724		USBKN	UNDW		21			WEP	BAKER	EN
480414		USENW	TOWR		37	11.000N	162.000E	WR	XRAY	E
480430		USENW	TOWR		49	11.000N	162.000E	WR	YOKE	E
480514		USENW	TOWR		18	11.000N	162.000E	WRU	ZEBRA	EN
490829		CP	TOWR	10-20	48.000N	076.000E	P	JOE 1	N	
510127		USNTSFAIRD			1	37.000N	116.000W	WR	ABLE	EN
510128		USNTSFAIRD			8	37.000N	116.000W	WR	BAKER	EN
510201		USNTSFAIRD			1	37.000N	116.000W	WR	EASY	EN
510202		USNTSFAIRD			8	37.000N	116.000W	WR	BAKER-2	EN
510206		USNTSFAIRD			22	37.000N	116.000W	WR	FOX	EN
510407		USENW	TOWR		70			WR	DOG	EN
510420		USENW	TOWR		47			WR	EASY	EN
510508		USENW	TOWR		225			WR B	GEORGE	EN
510524		USENW	TOWR		45.5			WR B	ITEM	EN
510924		CP	SURF		25				JOE 2	N
511018		CP	ATMO		50	48.000N	076.000E		JOE 3	N
511022		USNTS	TOWR		<0.1			WR	ABLE	E
511028		USNTS	AIRD		3.5			WR	BAKER	E
511030		USNTS	AIRD		14			WR	CHARLIE	E
511101		USNTS	AIRD		21			WR	DOG	E
511105		USNTS	AIRD		31			WR	EASY	E
511119		USNTS	SURF		1.2			WE	SUGAR	E
511129		USNTS	CRAT		1.2			WE	UNCLE	E
520401		USNTS	AIRD		1			WE	ABLE	E
520415		USNTS	AIRD		1			WE	BAKER	E
520422		USNTS	AIRD		31			WR	CHARLIE	E
520501		USNTS	AIRD		19			WR	DOG	E
520507		USNTS	TOWR		12			WR	EASY	E
520525		USNTS	TOWR		11			WR	FOX	E
520601		USNTS	TOWR		15			WR	GEORGE	E

520605	USNTS TOWR	14		WR	HOW	E
521003	GBMBI SHIP				HURRICANB	
521031	USENW SURF	10400		WR 2	MIKE	EN
521115	USENW AIRD	500		WR	KING	E
530317	USNTS TOWR	16		WR	ANNIE	E
530324	USNTS TOWR	24		WR	NANCY	E
530331	USNTS TOWR	0.2		WR	RUTH	E
530406	USNTS AIRD	11		WR	DIXIE	E
530411	USNTS TOWR	0.2		WR	RAY	E
530418	USNTS TOWR	23		WR	BADGER	E
530425	USNTS TOWR	43		WR	SIMON	E
530508	USNTS AIRD	27		WE	ENCORE	E
530519	USNTS TOWR	32		WR	HARRY	E
530525	USNTS ART	15		WR	GRABLE	E
530604	USNTS AIRD	61		WR	CLIMAX	E
530812	CP TOWR	200-300			JOE 4	N
530823	CP ATMO				JOE 5-7	N
531014	223000.0 GBEMU TOWR		28S	135E	TOTEM	B
531026	223000.0 GBEMU TOWR					B
540228	USBKN SURF	15000		WR 2	BRAVO	EN
540326	USBKN BARG	11000		WR 2	ROMEO	EN
540406	USBKN SURF	110		WR	KOON	E
540425	USBKN BARG	6900		WR 2	UNION	EN
540504	USBKN BARG	13500		WR 2	YANKEE	EN
540513	USENW BARG	1690		WR 2	NECTAR	EN
540914	053600.0 CP		55.000N 64.000E			N
550218	USNTS AIRD	1		WE	WASP	E
550222	USNTS TOWR	2		WR	MOTH	E
550301	USNTS TOWR	7		WR	TESLA	E
550307	USNTS TOWR	43		WR	TURK	E
550312	USNTS TOWR	4		WR	HORNET	E
550322	USNTS TOWR	8		WR	BEE	E
550323	USNTS CRAT	1		WE	ESS	E
550329	USNTS TOWR	14		WR	APPLE-1	E
550329	USNTS AIRD	3		WR	WASP p	E
550406	USNTS AIRD	3		WE	HA	E
550409	USNTS TOWR	2		WR	POST	E
550415	USNTS TOWR	22		WE	MET	E
550505	USNTS TOWR	29		WR	APPLE-2	E
550515	USNTS TOWR	28		WR	ZUCCHINIE	
550514	USPAC UNDW	30		WE	WIGWAM	EN
550729	CP	5				N
550802	CP	25		P		N
550921	CP	20		P		N
551106	CPKTS AIRB	215		U		N
551122	CPKTS AIRD	1600				N
560118	USNTS SURF	SLIGHT		SF	PROJ 56	E
560320	CP					N
560330	CP					N
560504	USENW SURF	40		WR	LACROSSEE	
560502	USBKN AIRD	3400		WR	CHEROKE	EN
560516	GBMBI TOWR				MOSAIC	B
560527	USBKN SURF	3500		WR 2	ZUNI	EN
560527	USENW TOWR	0.19		WR	YUMA	EN
560530	USENW TOWR	16.8		WR	ERIE	E
560606	USENW SURF	13.7		WR	SEMINOLEE	
560611	USBKN BARG	365		WR	FLATHEADEN	
560611	USENW TOWR	8.5		WR	BLACKFOOE	
560613	USENW TOWR	1.4		WR	KICKAPOOE	
560616	USENW AIRD	1.9		WR	OSAGE	E
560619	GBMBI TOWR					B
560621	USENW TOWR	16		WR	INCA	E
560625	USBKN BARG	1000		WR	DAKOTA	EN

560702	USENW	TOWR	350	WR	MOHAWK	EN
560708	USENW	BARG	1900	WR	APACHE	EN
560710	USBKN	BARG	4500	WR	NAVAJO	EN
560720	USBKN	BARG	5000	WR	TEWA	EN
560721	USENW	BARG	270	WR	HURON	EN
560824	CP	ATMO	<1000			N
560830	CP	ATMO	>20			N
560902	CP	ATMO				N
560910	CP	ATMO				N
560927	GBMAR	TOWR	>100		BUFFALO	B
561004	GBMAR	SURF	LOW			B
561011	GBMAR	AIRD	LOW			B
561022	GBMAR	TOWR	>100			B
561117	CP	ATMO				N
570119	CP	ATMO				N
570308	CP	ATMO				N
570403	CP	ATMO				N
570406	CP	ATMO				N
570410	CP	ATMO				N
570412	CP	ATMO				N
570416	CP	ATMO				N
570515 193700.0	GBCHR	AIRD	F300	2	GRAPPLE	B
570528	USNTS	TOWR	12	WR	BOLTZMANE	
570531 194100.0	GBCHR	AIRD	720	I		B
570602	USNTS	TOWR	.140	WR	FRANKLINE	
570605	USNTS	BALN	.0005	WR	LASSEN	E
570618	USNTS	BALN	10	WR	WILSON	E
570619 194000.0	GBCHR	AIRD	F200	2		B
570624	USNTS	BALN	37	WR	PRISCILLE	
570705	USNTS	BALN	74	WR	HOOD	E
570715	USNTS	TOWR	17	WR	DIABLO	E
570719	USNTS	ROCH	2	WE	JOHN	E
570724	USNTS	TOWR	10	WR	KEPLER	E
570725	USNTS	BALN	9.7	WR	OWENS	E
570807	USNTS	RC	SLIGHT	SF	PASCAL-AE	
570807	USNTS	BALN	19	WR	STOKES	E
570810	USNTS	TUNN	0	SF	SATURN	E
570818	USNTS	TOWR	17	WR	SHASTA	E
570822	CP		HIGH			N
570823	USNTS	BALN	11	WR	DOPPLER	E
570827	USNTS	RC		SF	PASCAL-BE	
570830	USNTS	BALN	4.7	WR	FRANKLINE	
570831	USNTS	TOWR	44	WR	SMOKY	E
570902	USNTS	TOWR	11	WR	GALILEO	E
570906	USNTS	BALN	.197	WR	WHEELER	E
570906	USNTS	SURF	0.3	SF	COLOUMBEE	
570908	USNTS	BALN	1	WR	LAPLACE	E
570914	USNTS	TOWR	11	WR	FIZEAU	E
570914 053000.0	GBMAR	TOWR	<20		ANTLER	B
570916	USNTS	BALN	12	WR	NEWTON	E
570919	USNTS	TUNN	1.7	WR	RAINIER	E
570923	USNTS	TOWR	19	WR	WHITNEY	E
570924	CPNZ		>1000 73.000N 055.000E			N
570925 003000.0	GBMAR	TOWR	>100			B
570926	CPKTS	UNDW	7-70			N
570928	USNTS	BALN	12	WR	CHARLESTE	
571006 085800.0	CPNZ	ATMO	HIGH 73.000N 055.000E			N
571007	USNTS	BALN	8	WR	MORGAN	E
571009 073000.0	GBMAR	BALN	>100			B
571010 065500.0	CPNZ	ATMO	LOW			N
571108 174700.0	GBCHR	AIRD	1800	2	GRAPPLE	B
571206	USNTS	RC	SLIGHT	SF	PASCAL-CE	

571209	USNTS	SURF	0.5	SF	COULOMBCE
571228	CP	ATMO			N
580222	USNTS	TUNN	<1	SF	VENUS E
580223	CPNZ	ATMO	>1000 73.000N 055.000E		N
580227 075900.0	CPNZ	ATMO	>1000 73.000N 055.000E		N
580227 102400.0	CPNZ	ATMO	HIGH 73.000N 055.000E		N
580314	USNTS	TUNN	<1	SF	URANUS E
580314	CPNZ	ATMO	<1000 73.000N 055.000E		N
580314	CP	ATMO	<1000		N
580315	CP	ATMO	<1000		N
580320	CPNZ	ATMO	LOW 73.000N 055.000E		N
580321	CP	ATMO	LOW		N
580322	CPNZ	ATMO	>20 73.000N 055.000E		N
580428	USPAC	BALN	1.7	WE	YUCCA E
580428 190500.0	GBCHR	AIRD	>1000		GRAPPLE B
580505	USENW	SURF	18	WR	CACTUS E
580511	USBKN	BARG	1300	WR	FIR E
580511	USENW	BARG	90	WR	BUTTERNUE
580512	USENW	SURF	1370	WR 2	KOA EN
580516	USENW	UNDW	9	WE	WAHOO E
580520	USENW	BARG	6	WR	HOLLY E
580521	USBKN	BARG	24	WR	NUTMEG E
580526	USENW	BARG	350	WR	YELLOWWOE
580526	USENW	BARG	61	WR	MAGNOLIAE
580530	USENW	BARG	15	WR	TOBACCO E
580531	USBKN	BARG	130	WR	SYCAMOREE
580602	USENW	BARG	18	WR	ROSE E
580608	USENW	UNDW	9	WE	UMBRELLAE
580610	USBKN	BARG	195	WR	MAPLE E
580614	USBKN	BARG	320	WR	ASPEN E
580614	USENW	BARG	1.5	WR	WALNUT E
580618	USENW	BARG	10	WR	LINDEN E
580627	USBKN	BARG	415	WR	REDWOOD E
580627	USENW	BARG	875	WR	ELDER E
580628	USENW	BARG	8900	WR 2	OAK EN
580629	USBKN	BARG	13	WR	HICKORY E
580701	USENW	BARG	5	WR	SEQUOIA E
580702	USBKN	BARG	220	WR	CEDAR E
580705	USENW	BARG	390	WR	DOGWOOD E
580712	USBKN	BARG	9300	WR	POPLAR E
580714	USENW	BARG	low	SF	SCAEVOLAE
580717	USENW	BARG	250	WR	PISONIA E
580722	USBKN	BARG	62	WR	JUNIPER E
580722	USENW	BARG	195	WR	OLIVE E
580726	USENW	BARG	2000	WR	PINE E
580801	USJON	ROCH	3800	WE	TEAK E
580806	USENW	SURF	FIZZ	WR	QUINCE E
580812	USJON	ROCH	3800	WE	ORANGE E
580818	USENW	SURF	low	WR	FIG E
580822 180000.0	GBCHR	BALN	>100		B
580827	USSAT	ROCH	1-2	WE	ARGUS 1 E
580830	USSAT	ROCH	1-2	WE	ARGUS 2 E
580902 172400.0	GBCHR	AIRD	>1000		B
580906	USSAT	ROCH	1-2	WE	ARGUS 3 E
580911 174800.0	GBCHR	AIRD	>1000		B
580912	USNTS	RC	.038	SF	OTERO E
580917	USNTS	RC	.015	SF	BERNALILE
580919	USNTS	BALN	.083	WR	EDDY E
580920	CPNZ	ATMO	73.000N 055.000E		N
580921	USNTS	RC	1.5	SF	LUNA E
580923	USNTS	TUNN		SF	MERCURY E
580923 175800.0	GBCHR	BALN	>100		B
580926	USNTS	RC	.002	SF	VALENCIAE

580928	USNTS	TUNN	.013	SF	MARS	E
580929	USNTS	BALN	2	WR	MORA	E
580930 075000.0	CPNZ	ATMO	50+	73.000N 055.000E		N
580930 095500.0	CPNZ	ATMO	50+	73.000N 055.000E		N
581002 080000.0	CPNZ	ATMO	>20	73.000N 055.000E		N
581002 090100.0	CPNZ	ATMO		73.000N 055.000E		N
581005	USNTS	RC	5.5	SF	COLFAX	E
581005	USNTS	BALN	77	SF	HIDALGO	E
581005 060000.0	CPNZ	ATMO		73.000N 055.000E		N
581008	USNTS	TUNN	72	WR	TAMALPA	E
581010	USNTS	TOWR	79	WR	QUAY	E
581010 075100.0	CPNZ	ATMO	HIGH	73.000N 055.000E		N
581012 075300.0	CPNZ	ATMO	>1000	73.000N 055.000E		N
581013	USNTS	BALN	1.4	WR	LEA	E
581014	USNTS	TUNN	0.115	SF	NEPTUNE	E
581015	USNTS	TOWR	1.2	WR	HAMILTONE	
581015 075100.0	CPNZ	ATMO	>1000	73.000N 055.000E		N
581016	USNTS	TUNN	5	WR	LOGAN	E
581016	USNTS	BALN	37	WR	DONA ANAE	
581017	USNTS	SURF	24	SF	VESTA	E
581018	USNTS	TOWR	90	WR	RIOARRIBE	
581018 095100.0	CPNZ	ATMO	>1000	73.000N 055.000E		N
581019 072700.0	CPNZ	ATMO	LOW	73.000N 055.000E		N
581020 082000.0	CPNZ	ATMO	>1000	73.000N 055.000E		N
581022	USNTS	BALN	6	WR	SOCORRO	E
581022	USNTS	BALN	115	WR	WRANGELLE	
581022	USNTS	BALN	188	WR	RUSHMOREE	
581022 082100.0	CPNZ	ATMO	>1000	73.000N 055.000E		N
581024	USNTS	TOWR	21	SF	CATRON	E
581024	USNTS	SURF	1.7	SF	JUNO	E
581024 080300.0	CPNZ	ATMO	HIGH	73.000N 055.000E		N
581025 082000.0	CPNZ	ATMO	HIGH	73.000N 055.000E		N
581026	USNTS	TOWR	0.7	SF	CERES	E
581026	USNTS	BALN	4.9	WR	SANFORD	E
581026	USNTS	BALN	2.2	WR	DE BACA	E
581027	USNTS	TOWR	0.6	SF	CHAVEZ	E
581029	USNTS	TUNN	55	WR	EVANS	E
581029	USNTS	TOWR	7.8	WR	HUMBOLDTE	
581030	USNTS	BALN	1.3	WR	SANTA FEE	
581030	USNTS	TUNN	22	WR	BLANCA	E
581030	USNTS	TOWR	0.2	SF	TITANIA	E
581101	CP	ATMO	LOW			N
581103	CP	ATMO	LOW			N
600213 070400.0	FRREG	TOWR	60-70	26.317N 000.067W WE P	g	BLEUE N
600401 061700.0	FRREG	SURF	<20	26.100N 000.150W WR P	g	BLANCHN
601227 073000.0	FRREG	TOWR	1.6	WE P	g	ROUGE N
610425 060000.0	FRREG	TOWR	FIZ0.7	P	g	VERTE N
610901	CPKTS	ATMO	150	50.000N 078.000E		N
610904	CPKTS	ATMO	10-80	50.000N 078.000E		N
610905	CPKTS	ATMO	LOW	50.000N 078.000E		N
610906	CPKPY	ATMO	25	48.450N 044.300E		N
610910 090000.0	CPNZ	ATMO	>1000	73.000N 055.000E		N
610910	CPNZ	ATMO	LOW	73.000N 055.000E		N
610912 100800.0	CPNZ	ATMO	>1000	73.000N 055.000E		N
610913	CPNZ	ATMO	LOW	73.000N 055.000E		N
610913	CPKTS	ATMO	LOW	50.000N 078.000E		N
610914 095616.7	CPNZ	ATMO	>1000	74.600N 051.100E		N
610915	USNTS	TUNN	2.6	WR	ANTLER	E
610916	USNTS	SHFT	LOW	WR	SHREW	E
610916 090800.0	CPNZ	ATMO	>1000	73.000N 055.000E		N
610917	CPKTS	ATMO	20-150	50.000N 078.000E		N
610918 075936.8	CPNZ	ATMO	>1000	74.000N 052.000E		N

610920	081200.0	CPNZ	ATMO	>1000	73.000N	055.000E		N
610922	080100.0	CPNZ	ATMO	>1000	73.000N	055.000E		N
611002	103100.0	CPNZ	ATMO	>1000	73.000N	055.000E		N
611004	073054.8	CPNZ	ATMO	>1000	73.700N	053.800E		N
611006	070000.0	CPNZ	ATMO	>1000	73.000N	055.000E		N
611006		CPKPY	ATMO	~200				N
611008		CPNZ	ATMO	LOW	73.000N	055.000E		N
611001		USNTS	SHFT	LOW			WR	BOOMER E
611010		USNTS	TUNN	LOW			WR	CHENA E
611011	073959.9	CP	UNDG	<20	49.772N	077.995E		A
611012		CPKTS	ATMO	LOW	50.000N	078.000E		N
611020		CPNZ	ATMO	>1000	73.000N	055.000E		N
611021		CPSYS	ATMO	<5				N
611023	083122.1	CPNZ	ATMO	25000	73.900N	053.800E		N
611023	103048.8	CPNZ	UNDW	LOW	70.700N	053.500E		N
611025	083300.0	CPNZ	ATMO	<1000	73.000N	055.000E		N
611027	083026.6	CPNZ	ATMO	20-150	70.700N	053.500E		N
611027		CPSYS	ATMO	<5				N
611029		USNTS	SHFT	LOW			WR	MINK E
611030	083300.0	CPNZ	ATMO	58000	73.000N	055.000E		N
611031	082900.0	CPNZ	ATMO	>1000	73.000N	055.000E		N
611031	083800.0	CPNZ	ATMO	<1000	73.000N	055.000E		N
611102	084100.0	CPNZ		20-150	73.000N	055.000E		N
611104	072000.0	CPNZ	ATMO	>1000	73.000N	055.000E		N
611107	112959.9	FRECK	TUNN	8	24.057N	005.052E	WR	AGATE N
611203		USNTS	SHFT	13.4			WR	FISHER E
611210		USCLS	SHFT	3			PS	GNAME E
611213		USNTS	SHFT	0.50			WR	MAD E
611217		USNTS	SHFT	LOW			WR	RINGTAILE
611222		USNTS	TUNN	LOW			WR	FEATHER E
620109		USNTS	SHFT	5.1			WR	STOAT E
620118		USNTS	SHFT	6.4			WR	AGOUTI E
620130		USNTS	SHFT	LOW			WR	DORMOUSEE
620202	080000.2	CPKTS	UNDG	<20	49.777N	078.001E		A
620208		USNTS	SHFT	3.07			WR	STILLWATE
620209		USNTS	SHFT	7.1			WR	ARMADILOE
620215		USNTS	SHFT	5.7			WE	HARD HATE
620219		USNTS	SHFT	1.9			WR	CHINCHILE
620219		USNTS	SHFT	LOW			WR	CODSAW E
620223		USNTS	SHFT	11.90			WR	CIMARRONE
620224		USNTS	SHFT	LOW			WR	PLATYPUSE
620301		GBNTS	SHFT	LOW				PAMPAS E
620305		USNTS	CRAT	0.43			WE	DANNYBOYE
620306		USNTS	SHFT	LOW			WR	ERMINE E
620308		USNTS	SHFT	8.4			WR	BRAZOS E
620315		USNTS	SHFT	LOW			WR	HOGNOSE E
620328		USNTS	SHFT	3.40			WR	HOOSIC E
620331		USNTS	SHFT	LOW			WR	CHINCHIE
620405		USNTS	SHFT	10.6			WR	DORMOUSpE
620406		USNTS	SHFT	LOW			WR	PASSAIC E
620412		USNTS	SHFT	LOW			WR	HUDSON E
620414		USNTS	TUNN	1.85			WR	PLATTE E
620421		USNTS	SHFT	LOW			WR	DEAD E
620425		USCHR	AIRD	20-1000			WR	ADOBE E
620427		USCHR	AIRD	20-1000			WR	AZTEC E
620427		USNTS	SHFT	LOW			WR	BLACK E
620501	100000.5	FRECK	TUNN	>20	24.063N	005.042E	WR	BERYL N
620502		USCHR	AIRD	LOW 1000			WR	ARKANSASE
620504		USCHR	AIRD	20-1000			WR	QUESTA E
620506		USPAC	ROCH	600			WR	FRIGATEBEN
620507		USNTS	SHFT	LOW			WR	PACA E
620508		USCHR	AIRD	20-1000			WR	YUKON E
620509		USCHR	AIRD	20-1000			WR	MESILLA E

620510	USNTS	SHFT	LOW	WR	ARIKAREEE
620511	USCHR	AIRD	20-1000	WR	MUSKEGONE
620511	USPAC	UNDW	LOW	WE	SWORDFISE
620512	USCHR	AIRD	20-1000	WR	ENCINO E
620512	USNTS	SHFT	40	WR	AARDVARKE
620514	USCHR	AIRD	20-1000	WR	SWANEE E
620519	USNTS	SHFT	LOW	WR	EEL E
620519	USCHR	AIRD	20-1000	WR	CHETCO E
620525	USNTS	SHFT	LOW	WR	WHITE E
620525	USCHR	AIRD	LOW	WR	TANANA E
620527	USCHR	AIRD	20-1000	WR	NAMBE E
620601	USNTS	SHFT	LOW	WR	RACCOON E
620606	USNTS	SHFT	LOW	WR	PACKRAT E
620608	USCHR	AIRD	20-1000	WR	ALMA E
620609	USCHR	AIRD	20-1000	WR	TRUCKEE E
620610	USCHR	AIRD	>1000	WR 2	YESO EN
620612	USCHR	AIRD	20-1000	WR	HARLEM E
620613	USNTS	TUNN	LOW	WR	DESMOINEE
620615	USCHR	AIRD	20-1000	WR	RINCONADE
620617	USCHR	AIRD	20-1000	WR	DULCE E
620619	USCHR	AIRD	LOW	WR	PETIT E
620621	USNTS	SHFT	LOW	WR	DAMAN 1 E
620622	USCHR	AIRD	20-1000	WR	OTOWI E
620627	USCHR	AIRD	>1000	WR 2	BIGHORN EN
620627	USNTS	SHFT	67	WR	HAYMAKERE
620628	USNTS	TUNN	LOW	WE	MARSHMALE
620630	USCHR	AIRD	>1000	WR 2	BLUESTONEN
620630	USNTS	SHFT	LOW	WR	SACRAMENE
620706	USNTS	CRAT	104	PS	SEDAN E
620707	USNTS	SURF	LOW	WE	LFELLER1E
620709	USJON	ROCH	1400	WE 2	STARFISHEN
620710	USCHR	AIRD	20-1000	WR	SUNSET
620711	USCHR	AIRD	>1000	WR 2	PAMLICO EN
620711	USNTS	CRAT	0.5	WE	JOHNNIEBE
620713	USNTS	SHFT	20-1000	WR	MERRIMACE
620714	USNTS	TOWR	LOW	WE	SMALLBOYE
620717	USNTS	SURF	LOW	WE	LFELLER2E
620727	USNTS	SHFT	LOW	WR	WICHITA E
620805	0909000.0	CPNZ	ATMO	30000	73.000N 055.000E
620807	0930000.0	CPKTS	ATMO	LOW	50.000N 078.000E
620810	0900000.0	CPNZ	ATMO	<1000	73.000N 055.000E
620820	090214.1	CPNZ	ATMO	>1000	74.300N 051.500E
620822	0900000.0	CPNZ	ATMO	>1000	73.000N 055.000E
620824		USNTS	SHFT	LOW	WR
620824		USNTS	SHFT	LOW	WR
620825	0540000.0	CPKTS	ATMO	LOW	50.000N 078.000E
620825	0900000.0	CPNZ	ATMO	>1000	73.000N 055.000E
620827	0900000.0	CPNZ	ATMO	1000+	73.000N 055.000E
620901	1240000.0	CPNZ	ATMO		73.000N 055.000E
620902		CPNZ	ATMO	20-150	73.000N 055.000E
620906		USNTS	SHFT	LOW	WR
620908	1018000.0	CPNZ	ATMO	>1000	73.000N 055.000E
620914		USNTS	SHFT	LOW	WR
620915	080213.9	CPNZ	ATMO	>1000	74.400N 051.500E
620916	1059000.0	CPNZ	ATMO	>1000	73.000N 055.000E
620918	082902.7	CPNZ	ATMO	>1000	73.200N 054.700E
620919	110056.4	CPNZ	ATMO	20000	73.800N 053.800E
620920		USNTS	SHFT	LOW	WR
620921	0801000.0	CPNZ	ATMO	25000	73.000N 055.000E
620925	1303000.0	CPNZ		25000	73.000N 055.000E
620927	080316.4	CPNZ	ATMO	>1000	74.300N 052.400E
620929		USNTS	SHFT	LOW	WR
621002		USJON	AIRD	20-1000	WR
					ALLEGHENY
					ANDROSCOE

621005		USNTS SHFT	115	WR	MISSISSIE
621006		USJON AIRD	LOW	WR	BUMPING E
621007	163200.0	CPNZ ATMO	>20 73.000N 055.000E		N
621012		USNTS SHFT	LOW	WR	ROANOKE E
621012		USNTS SHFT	LOW	WR	WOLVERINE
621014		CPKTS ATMO	LOW 50.000N 078.000E		N
621018		USJON AIRD	>1000	WR 2	CHAMA E
621018		USNTS SHFT	LOW	WR	TIOGA E
621019		USNTS SHFT	LOW	WR	BANDICOOE
621020		USJON ROCH	LOW	WE	CHECKMATE
621022	034100.0	CPKTS ATMO	>100 50.000N 078.000E		N
621022	090600.0	CPNZ ATMO	>1000 73.000N 055.000E		N
621026		USJON ROCH	<1000	WE	BLUEGIL E
621027		USNTS SHFT	LOW	WR	SANTEE E
621027		USJON AIRD	20-1000	WR	CALAMITYE
621027	073500.0	CPNZ ATMO	20-1000 73.000N 055.000E		N
621028	044100.0	CPKTS ATMO	LOW 50.000N 078.000E		N
621029	073500.0	CPNZ ATMO	20-1000 73.000N 055.000E		N
621030		USJON AIRD	>1000	WR 2	HOUSATONEN
621030		CPNZ ATMO	20-1000 73.000N 055.000E		N
621101		USJON ROCH	<1000	WE	KINGFISHE
621101	063000.0	CPNZ ATMO	20-1000 73.000N 055.000E		N
621101	092000.0	CPKTS ATMO	20-1000 50.000N 078.000E		N
621103	083100.0	CPNZ ATMO	20-1000 73.000N 055.000E		N
621104		USJON ROCH	LOW	WE	TIGHTROPE
621104		CPKTS ATMO	20-1000 50.000N 078.000E		N
621109		USNTS SHFT	LOW	WR	ST. LAWREE
621115		USNTS SHFT	LOW	WR	GUNDI E
621117		CPKTS ATMO	LOW 50.000N 078.000E		N
621127		USNTS SHFT	LOW	PS	ANACOSTIE
621204		USNTS SHFT	LOW	WR	TAUNTON E
621207		GBNTS SHFT	LOW		TENDRAC E
621212		USNTS TUNN	LOW	WR	MADISON E
621212		USNTS SHFT	LOW	WR	NUMBAT E
621214		USNTS SHFT	LOW	WR	MANATEE E
621218		CPNZ ATMO	20-1000 73.000N 055.000E		N
621218		CPNZ ATMO	20-1000 73.000N 055.000E		N
621220		CPNZ ATMO	20-1000 73.000N 055.000E		N
621222		CPNZ ATMO	20-1000 73.000N 055.000E		N
621223	111500.0	CPNZ ATMO	500-5000 73.000N 055.000E		N
621224	104421.9	CPNZ ATMO		74.200N 052.300E	N
621224	111142.0	CPNZ ATMO		20000 73.600N 057.500E	N
621225	133557.2	CPNZ ATMO	500-5000 73.400N 056.500E		N
630208		USNTS SHFT	LOW	WR	CASSELMAE
630208		USNTS SHFT	LOW	WR	ACUSHI E
630208		USNTS SHFT	LOW	WR	FERRET E
630208		USNTS SHFT	LOW	WR	HATCHIE E
630215		USNTS SHFT	LOW	WR	CHIPMUNKE
630221		USNTS SHFT	LOW	PS	KAWEAH E
630221		USNTS SHFT	LOW	WR	CARMEL E
630301		USNTS SHFT	LOW	WR	JERBOA E
630315		USNTS SHFT	LOW	WR	TOYAH E
630318	100100.4	FRECK SH?	4.9	4.86 24.041N 005.072E	WR
630329		USNTS SH?	LOW	WR	GERBIL E
630330	095900.3	FRECK TUNN	<20 24.043N 005.057E	WR	AMETHST N
630405		USNTS SHFT	LOW	WR	FERRETPRE
630410		USNTS SHFT	LOW	WR	COYPU E
630411		USNTS SHFT	LOW	WR	CUMBERLAE
630424		USNTS SHFT	LOW	WR	KOOTANAIE
630424		USNTS SHFT	LOW	WR	PAISANO E
630509		USNTS SHFT	LOW	WR	GUNDIPRIE
630517		USNTS SHFT	LOW	WR	HARKEE E
630517		USNTS SHFT	LOW	WR	TEJON E

630522	USNTS SHFT		20-1000		WR	STONES E
630529	USNTS SHFT		LOW		WR	PLEASANTE
630605	USNTS TUNN		LOW		WR	YUBA E
630606	USNTS SHFT		LOW		WR	HUTIA E
630606	USNTS SHFT		LOW		WR	APSHAPAPE
630614	USNTS SHFT		LOW		WR	MATACO E
630625	USNTS SHFT		LOW		WR	KENNEBECE
630812	USNTS SHFT		LOW		WR	PEKAN E
630815	USNTS SHFT		LOW		WR	SATSOP E
630823 1320	#NATCHES			059 NTS09 LLNL		
630823 1320	USNTSYSS1		LOW		WR	NATCHES E
630823 1320	#KOHOCTON*			255 NTS09 LLNL		
630823 1320	USNTSYSS2		LOW		WR	KOHOCTONE
630913	USNTS SHFT		LOW		WR	AHTANUM E
630913	USNTS SHFT		249		WR	BILBY E
630927	USNTS SHFT		LOW		WR	CARP E
630927	USNTS SHFT		LOW		WR	NARRAGUAE
631011	USNTS SHFT		LOW		WR	GRUNION E
631011	USNTS SHFT		LOW		PS	TORNILLOE
631016	USNTS SHFT		20-1000		WR	CLEARWATE
631017	USNTS SHFT		LOW		WR	MULLET
631020 130000.0	FRECK TUNN	5.5	5.49 24.036N 005.039E	WR	RUBIS N	
631026	USFAL SHFT		12	VU	SHOAL E	
631114	USNTS SHFT		LOW	WR	ANCHOVY E	
631115	USNTS SHFT		LOW	WR	MUSTANG E	
631122	USNTS SHFT		20-1000	WR	GREYS E	
631204 1638						
631204 1638	#SARDINE*			262 NTS03 LANL		
631204 1638	USNTSYSS1		<20		WR	SARDINE E
631204 1638	#BARRACUDA			263 NTS03 LANL		
631204 1638	USNTSYSS2		<20		WR	BARRACUDE
631212	USNTS SHFT		LOW		WR	EAGLE E
631220	USNTS SHFT		LOW		WR	TUNA E
640116	USNTS SHFT		20-200 37.090N 116.090W	WR	FORE E	
640123 160000.2	USNTS SHFT	4.2	<20 37.080N 116.050W	WR	OCONTO E	
640130	USNTS SHFT		<20	WR	CLUB E	
640212	USNTS SHFT		<20	WR	SOLENDONE	
640213	USNTS SHFT		<20	WR	BUNKER E	
640218	USNTS SHFT		<20	WR	BONEFISHE	
640218	USNTS SHFT		<20	WR	MACKERELE	
640220 153000.1	USNTS SHFT	5.1	24 37.20N 111.00W		KLICKITAEN	
640312	USNTS SHFT		<20	WR	HANDICAPE	
640313 160200.1	USNTS SHFT		<20 36.901N 116.201W	WR	PIKE E	
640315 075958.2	CPKTSUDUNDG	5.6	20-150 49.815N 078.075E		A	
640414 144000.1	USNTS SHFT		<20 37.150N 115.980W	WR	HOOK E	
640415 143000.1	USNTS SHFT		<20 37.102N 116.402W	WR	STURGEONE	
640417	USNTS SHFT		<20	WR	BOGEY E	
640424 201000.1	USNTS SHFT	5.2	20-200 37.070N 116.110W	WR	TURF E	
640429 204700.0	USNTS SHFT	4.1	<20 37.040N 116.040W	WR	PIPEFISHE	
640507	USNTS SHFT		<20	WR	DRIVER E	
640514 144000.1	USNTS SHFT		<20 36.405N 115.803W	WR	BACKSWINE	
640515 161459.6	USNTS SHFT		<20 37.100N 116.000W	WR	MINNOW E	
640516 060057.8	CPKTSUDUNDG	5.6	20-150 49.807N 078.101E	GR	A	
640611 164501.0	USNTS SHFT		<20 37.160N 115.901W	PS	ACE E	
640612	USNTS SHFT		<20	WR	BITTERLIE	
640615 134000.4	FRECK TUNN		<20 24.067N 005.035E	WR	TOPAZE N	
640618	USNTS SHFT		<20	WR	DUFFER E	
640625 133000.3	USNTS SHFT		<20 37.050N 116.070W	WR	FADE E	
640630 133259.8	USNTS SHFT		<20 37.130N 116.100W	PS	DUB E	
640716 131459.9	USNTS SHFT		20-200 37.100N 116.070W	WR	BYE E	
640717	GBNTS SHFT		<20		CORMORANE	
640719 055958.6	CPKTSUDUNDG	5.4	<20 49.809N 078.092E	GR	A	
640723	USNTS SHFT		<20	WR	LINKS E	

841209	GBNTS	SHFT		20-150			EGMONT	E
841215	USNTS	SHFT		20-150		WR	TIERRA	E
841216 035502.7	CPKTS	UNDG	6.1	81	49.960N 078.860E			N
841219 060004.2	PCLNR	UNDG	4.7	5-50	41.683N 088.450E			N
841220	USNTS	SHFT		<20		WR	MINERO	E
841228 035010.7	CPKTS	UNDG	6.0	61	49.860N 078.750E			N
850210 032707.6	CPKTS	UNDG	5.9	48	49.880N 078.820E			N
850315	USNTS	SHFT		20-150		WR	VAUGHN	E
850323	USNTS	SHFT		20-150		WR	COTTAGE	E
850402	USNTS	SHFT		20-150		WR	HERMOSA	E
850406	USNTS	TUNN		<20		WE	Y RAIN	E
850419 135358.7	CP	UNDG	4.7	5.2	44.440N 057.930E			N
850425 005706.5	CPKTS	UNDG	5.9	48	49.920N 078.970E			N
850430 172857.0	FRMUR	SHFT	5.1	15	22.1S 138.9W	WR		N
850502	USNTS	SHFT		20-150		WR	TOWANDA	E
850508 202800.0	FRMUR	SHFT	5.8 5	90	21.8S 139.06W	WR		N
850603 173000.0	FRMUR	SHFT	5.1	10		WR		N
850607 174000.0	FRMUR	SHFT	4.8	5		WR		N
850612	USNTS	SHFT		20-150		WR	SALUT	E
850612	USNTS	SHFT		<20		WR	VILLE	E
850615 005700.7	CPKTS	UNDG	6.0	61	49.890N 078.880E			N
850626	USNTS	SHFT		<20		WR	MARIBO	E
850630 023902.7	CPKTS	UNDG	6.0	61	49.860N 078.700E			N
850711 022700.0	CPKTS	UNDG	4.0	0.05	50.000N 078.000E			N
850718 211457.5	CP	UNDG	5.0	10	65.965N 040.754E			N
850720 005300.0	CPKTS	UNDG	6.7	27	50.000N 079.000E			N
850725	USNTS	SHFT		20-150		WR	SERENA	E
850725 031100.0	CPKTS	UNDG	5.3	1.00	50.000N 079.000E			N
850814	USNTS	SHFT		<20		WR	CABRERO	E
850817	USNTS	SHFT		<20		WR	CHAMITA	E
850927	USNTS	SHFT		<20		WR	PONIL	E
851009	USNTS	TUNN		<20		WE	MILLYRRDE	
851009	USNTS	TUNN		<20		WE	d BEECH	E
851012	USNTS?						**	N
851016	USNTS	SHFT		20-150		WR	ROQUEFORE	
851024 175000.0	FRMUR	SHFT	4.5	2		WR	HERO	N
851026 163458.0	FRMUR	SHFT	5.3 4.5	20	21.81S 139W	WR		N
851030	USNTS	SHFT		<20		WR	ABO	E
851124 163000.0	FRMUR	SHFT	4.8	5	21.7S 138.8W	WR		N
851126 174200.0	FRMUR	SHFT	5.6	55	21.86S 138.92W	WR		NZ
851205	GBNTS	SHFT		20-150			KINIBITOE	
851228	USNTS	SHFT		20-150		WR	GOLDSTONE	
860322	USNTS	SHFT		20-150		WR	GLENCOE	E
860410	USNTS	TUNN		<20		WE	MIGHTYOAE	
860420 231229.9	USNTS	SHFT		<20		WR	MOGOLLONE	
860422	USNTS	SHFT		20-150		WR	JEFFERSOE	
860426 170156.6	FR	SHFT	4.8	5	22.150S 139.120W	WR		N
860506 165800.0	FRMUR	SHFT	4.7	5		WR		N
860521	USNTS	SHFT		<20		WE	PANAMINTE	
860527 171500.0	FRMUR	SHFT	4.7	4		WR		N
860530 172458.2	FR	SHFT	5.4 4.3	30	21.913S 139.100W	WR		N
860605	USNTS	SHFT		20-150		WR	TAJO	E
860625	GBNTS	SHFT		20-150			DARWIN	E
860717	USNTS	SHFT		20-150		WR	CYBAR	E
860904 160900.1	USNTS	SHFT		<20		WR	GALVESTOE	
860724	USNTS	SHFT		<20		WR	CORNUCOPE	
860911	USNTS	SHFT		<20		WR	ALEMAN	E
860930	USNTS	SHFT		20-150		WR	LABQUARKE	
861016	USNTS	SHFT		20-150		WR	BELMONT	E
861110 165800.0	FRMUR	SHFT	4.9	6		WR		N
861112 170158.5	FR	SHFT	5.3	25	21.894S 139.068W	WR		N
861114	USNTS	SHFT		20-150		WR	GASCON	E
861206 171000.0	FRMUR	SHFT	5.0	9		WR		N

880504	005706.8	CPKTS	UNDG	6.1		49.890N	078.760E	I
880507	224958.3	CPNZ	UNDG	5.6		73.350N	054.430E	I
880511	165958.1	FR	SHFT	5.3	20	21.927S	139.107W	WR N
880513		USNTS	SHFT		<150		WR	SCHELLBOE
880521		USNTS	SHFT		<150		WR	LAREDO E
880525	170058.0	FR	SHFT	5.8	80	21.899S	139.027W	WR N
880602		USNTS	SHFT		<150		WR	COMSTOCKE
880614	022706.4	CPKTS	UNDG	5.1		50.000N	079.000E	I
880616	171457.0	FRMUR	SHFT	4.8	5		WR	N
880622		USNTS	SHFT		<150		WR	RHYOLITEE
880622		USNTS	SHFT		<150		SF	NIGHTINGE
880623	173058.5	FR	SHFT	5.4	30	21.928S	139.042W	WR N
880707		USNTS	SHFT		<150		WR	ALAMO E
880817		USNTS	SHFT		<150		WR	KEARSRGEE
880822	161958.5	CP	UNDG	5.3		66.310N	078.520E	I
880823		USNTS	SHFT		<20		WR	HARLINGEE
880823	173000.0	HARLINGEN-A				290	NTS06 LANL	
880823	173000.0	USNTSYSS1			<20		WR	HARLINGEN
880823	173000.0	HARLINGEN-B				290	NTS06 LANL	
880823	173000.0	USNTSYSS2			<20		WR	HARLINGEN
880830		USNTS	SHFT		<150		WR	BULLFROGE
880906	161958.7	CP	UNDG			61.330N	047.980E	I
880914	035957.6	CPKTS	UNDG	6.1		49.810N	078.800E	I
880929	070003.1	PCLNR	TUNN	4.7	1-20	41.750N	088.467E	N
881013		USNTS	SHFT		<150		WR	DAHLHARTE
881018	034006.7	CPKTS	UNDG	4.9		49.860N	078.100E	I
881025	170000.0	FRMUR	SHFT	4.4	2		WR	N
881105	162957.6	FR	SHFT	5.6	50	22.052S	139.029W	WR N
881109		USNTS	SHFT		<20		WR	MONAHANSE
881109	201500.0	MONAHANS-A				290	NTS03 LANL	
881109	201500.0	USNTSYSS1			<20		WR	MONAHANSN
881109	201500.0	MONAHANS-B				290	NTS06 LANL	
881109	201500.0	USNTSYSS2			<20		WR	MONAHANSN
881112	033003.8	CPKTS	UNDG	5.4		50.030N	078.980E	I
881123	170058.5	FR	SHFT	5.6	40	22.908S	139.029W	WR N
881123	035706.8	CPKTS	UNDG	5.4		49.770N	078.060E	I
881130	175454.3	FRFAN	SHFT	5.9	100	22.900S	138.910W	WR N
881204	051953.2	CPNZ	UNDG	5.9		73.380N	054.960E	I
881209		USNTS	SHFT		<20		WR	KAWICH AE
881209	151500.0	KAWICH A-WHITE				369	NTS08 LLNL	
881209	151500.0	USNTSYSS1			<20		WR	KAWICH AE
881209	151500.0	KAWICH A-BLUE				384	NTS08 LLNL	
881209	151500.0	USNTSYSS1			<20		WR	KAWICH AE
881210		USNTS	TUNN		<150		WE	Y ECHO E
881217	041807.0	CPKTS	UNDG	5.9		49.850N	078.930E	I
881228	052800.0	CPKTS	UNDG			50.000N	079.000E	I
890122	035706.7	CPKTS	UNDG	6.0		49.900N	078.830E	I
890210		USNTS	SHFT		20-150		WR	TEXARKANE
890212	041506.9	CPKTS	UNDG	5.8		49.900N	078.750E	I
890217	040106.8	CPKTS	UNDG	5.1		49.770N	078.070E	I
890224	161500.0	KAWICH-RED				370	NTS02 LLNL	
890224	161500.0	USNTSYSS1			<20		WR	KAWICH-RE
890224	161500.0	KAWICH-BLACK				431	NTS02 LLNL	
890224	161500.0	USNTSYSS1			<20		WR	KAWICH-BE
890309		USNTS	SHFT		20-150		WR	INGOT E
890511	163348.2	FRMUR	SH?	5.5		21.700S	139.100W	I
890515	121000.0	PALISADE-1				345	NTS04 LLNL	
890515	121000.0	USNTSYSS1			<20		WR	PALISADEE
890515	121000.0	PALISADE-2				392	NTS04 LLNL	
890515	121000.0	USNTSYSS1			<20		WR	PALISADEE
890515	121000.0	PALISADE-3				404	NTS04 LLNL	
890515	121000.0	USNTSYSS1			<20		WR	PALISADEE
890520	175900	FR		4.1	0-10			Z

890526	USNTS	SHFT		<20		WR	TULIA	E
890603	172958.8	FRMUR	SH?	5.2	21.800S	139.100W		I
890610	172959.0	FRMUR	SH?	5.5	22.260S	138.720W		I
890622	USNTS	SHFT		20-150		WR	CONTACT	E
890627	USNTS	SHFT		20-150		WR	AMARILLOE	
890708	034657.7	CPKTS	UNDG	5.6	49.860N	078.810E		I
890902	041657.3	CPKTS	UNDG	5.1	50.030N	079.020E		I
890914	USNTS	TUNN		<20		WE	DISKOELME	
891004	112957.9	CPKTS	UNDG	4.7	49.830N	078.090E		I
891019	094957.3	CPKTS	UNDG	5.9	49.900N	078.970E		I
891024	162958.5	FRMUR	SH?	5.4	21.850S	139.010W		I
891031	USNTS	SHFT		20-150		WR	HORNITOSE	
891031	165658.9	FRMUR	SH?	5.2	21.760S	138.980W		I
891115	USNTS	SHFT		<20		WR	MULESHOEE	
891120	172858.7	FRMUR	SH?	5.3	21.790S	130.000W		I
891127	165959.0	FRMUR	SH?	5.6	22.370S	138.960W		I
891208	GBNTS	SHFT		20-150			BARNWELLE	
891220	220000.0	WHITEFACE-B			183	NTS03 LANL		
891220	220000.0	USNTSYSS1		<20		WR	WHITEFACE	
891220	220000.0	WHITEFACE-A			197	NTS03 LANL		
891220	220000.0	USNTSYSS1		<20		WR	WHITEFACE	
900310	USNTS	SHFT		20-150		WR	METROPOLE	
900406	USNTS	SHFT		<20		WR	BOWIE	E
900526	075957.8	PCLNR	SHFT	5.4	15-65	41.567N 088.683E		N
900602	172959.0	FRMUR	SH?	5.3	4.3	30 21.820S 138.940W		DI
900607	174900.0	FRMUR	SH?	4.3		3		D
900613	USNTS	SHFT		20-150		WR	BULLION	E
900621	USNTS	SHFT		<20		WR	AUSTIN	E
900626	175958.4	FRFAN	SH?	5.5	4.3	100 22.200S 138.830W		DI
900704	175958.8	FRMUR	SH?	4.9		18 21.800S 139.100W		DI
900725	170000.0	MINERAL QUARRY				389 NTS12 LANL, DOD		
900725	170000.0	USNTSRTUN1		<20		WR	MINERALQE	
900725	170000.0	RANDSBURG				389 NTS12 LANL, DOD		
900725	170000.0	USNTSRTUN1		<20		WR	RANDSBURE	
900816	045957.6	PCLNR	SHFT	6.2	50-200	41.567N 081.567E		N
900920	161500.0	SUNDOWN-B				256 NTS01 LANL		
900920	161500.0	USNTSYSS1		<20		WR	SUNDOWN-E	
900920	161500.0	SUNDOWN-A				270 NTS01 LANL		
900920	161500.0	USNTSYSS1		<20		WR	SUNDOWN-E	
900927	USNTS	SHFT		<20		WE	LEDOUX	E
901012	USNTS	SHFT		20-150		WR	TENABO	E
901024	145758.3	CPNZ	UNDG	5.7		73.360N 054.670E		I
901114	GBNTS	SHFT		20-150			HOUSTON	E
901114	181158.4	FRMUR	SH?	5.6	5.8	117 22.200S 138.840W		DI
901121	165958.4	FRMUR	SH?	5.4		36 21.900S 138.980W		DI
910308	210200.0	COSO-BRONZE				333 NTS04 LLNL		
910308	210200.0	USNTSYSS1		<20		WR	COSO-BROE	
910308	210200.0	COSO-GRAY				442 NTS04 LLNL		
910308	210200.0	USNTSYSS1		<20		WR	COSO-GRAE	
910308	210200.0	COSO-SILVER				475 NTS04 LLNL		
910308	210200.0	USNTSYSS1		<20		WR	COSO-SILE	
910404	USNTS	SHFT		20-150		WR	BEXAR	E
910416	USNTS	SHFT		20-150		WR	MONTELO	E
910507	170000.0	FRMUR	SH?	3.8		1		D
910518	171458.5	FRMUR	SH?	5.1		16 21.832S 139.014W		D
910529	185958.2	FRMUR	SH?	5.5		107 22.256S 138.794W		E
910614	175957.9	FRMUR	SH?	5.4		28 21.944S 138.988W		D
910705	180000.0	FRMUR	SH?	3.8		0.3		D
910715	180958.3	FRMUR	SH?	5.3		34 21.877S 138.963W		E
910815	USNTS	SHFT		<20		WR	FLOYDADAE	
910914	USNTS	SHFT		20-150		WR	HOYA	E
910919	USNTS	TUNN		<20		WE	DISTANTZE	
911018	USNTS	SHFT		20-150		WR	LUBBOCK	E

911126	GBNTS	SHFT	<20		BRISTOL E
920326	USNTS	SHFT	20-150	WR	JUNCTIONE
920430	USNTS	TUNN	<20	WE	dFORTUNEE
920521 045957.4	PCLNR	UNDG	6.6	700-1800 41.583N 088.880E	N
920619	USNTS	SHFT	<20	WR	VICTORIAE
920623 140000.0	GALENA-YELLOW			290 NTS04 LLNL	
920623 140000.0	USNTSYSS1		<20	WR	GALENA-YE
920623 140000.0	GALENA-ORANGE			380 NTS09 LLNL	
920623 140000.0	USNTSYSS1		<20	WR	GALENA-OE
920623 140000.0	GALENA-GREEN			400 NTS09 LLNL	
920623 140000.0	USNTSYSS1		<20	WR	GALENA-GE
920918 170000.0	USNTS	TUNN	4.4	<20 37.207N 116.210W WE	HUNTERSTE
920923	USNTS	SHFT	<20	WR	DIVIDER E
920925 804000.0	PCLNR	UNDG	5.4	1-2	N
931005 020000	PCLNR	UNDG	5.8	41.7N 088.6E	
940610 062600	PCLNR	UNDG	5.7	41.64N 088.86E	C
941007 032558.2	PCLNR			41.55N 089.07E	R
950515 040559.6	PCLNR	UNDG	5.7	41.630N 088.870E	G
950817 005959.3	PCLNR	UNDG	5.5	41.600N 088.860W	G
950905 213000.4	FRMUR	UNDG	4.7	21.850S 138.940W	G
951001 232959.4	FRFAN	UNDG	5.2 3.9	22.250S 138.760W	G
951027 220000.0	FRMUR	UNDG	5.3	60 21.820S 139.050W	G
951121 212959.9	FRMUR	UNDG	4.6	21.900S 138.960W	G
951227 212959.8	FRMUR	UNDG	5.0	21.800S 139.090W	G
960127 212959.5	FRFAN	UNDG	5.1	22.270S 138.780W	G
960608 025559.4	PCLNR	UNDG	5.7 4.0	41.65N 88.76E	G
960729 014859.1	PCLNR	UNDG	4.7	41.69N 88.35E	G
980511 101344.2	INRAJ	UNDG	5.1 3.6	43 27.072N 71.761E	SHAKTI1 Gi
980511 101344.2	INRAJ	UNDG		12 27.072N 71.761E	SHAKTI2 Gi
980511 101344.2	INRAJ	UNDG		0.2 27.072N 71.761E	SHAKTI3 Gi
980513 0651	INRAJ	UNDG	3?	0.5 27.1N 71.7E	SHAKTI4 i
980513 0651	INRAJ	UNDG	3?	0.3 27.1N 71.7E	SHATLI5 i
980528 101617.6	PKCHA	UNDG	4.9 3.6	? 28.903N 64.893E	G
980528 101617.6	PKCHA	UNDG	4.9 3.6	? 28.903N 64.893E	G
980530 065506.3	PKCHA	UNDG	4.3	? 28.513N 63.865E	G

980528, 980530 There is some doubt as to how many tests occurred at each of these days. It appears that 980528 probably included not less than two tests.

710429 NTS Mine Throw may have been a chemical explosion.

Threshold Test Ban Treaty Verification to date:

USSR/Russian Federation tests verified by the US: None

UK tests at the NTS verified by the Russian Federation: None

US tests verified by the USSR: HOYA On-site inspection at NTS

JUNCTION hydrodynamic method at NTS

JUNCTION seismic method at TUL, RSSD, NEW

NOTE: 920521 PRC test coordinates were grossly in error- near south pole.
They were corrected 931006.

The only known nuclear explosion in 1993 was incorrectly dated 921005.
Correction made 1994 APR02.

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