

FOA
DEFENCE RESEARCH
ESTABLISHMENT

User report

sipri
STOCKHOLM INTERNATIONAL
PEACE RESEARCH INSTITUTE

Nuclear Explosions 1945 - 1998

Nils-Olov Bergkvist
Ragnild Fern



31 / 48
←

**PLEASE BE AWARE THAT
ALL OF THE MISSING PAGES IN THIS DOCUMENT
WERE ORIGINALLY BLANK**

The picture on the front cover shows numerous cables laid out at an underground nuclear test location at Yucca Flat, Nevada. Yucca Flat was the principle underground nuclear weapons testing area at the Nevada Test Site, United States. The cranes in the picture were used to lower the cable "down-hole" with the nuclear weapon canister. Scientific data was communicated through the cables to recording trailers on the surface. The tower was used to hold the instrumentation canister; the tower was removed before the nuclear device was detonated. The drill emplacement hole is beneath the tower. The picture has been down-loaded (by permission) from the web-site of **Nevada Division of Environmental Protection Bureau of Federal Facilities**.

DEFENCE RESEARCH ESTABLISHMENT
Division of Systems and Underwater Technology
SE-172 90 STOCKHOLM
Sweden

FOA-R--00-01572-180--SE
July 2000
ISSN 1104-9154

Nuclear Explosions 1945 - 1998

**Nils-Olov Bergkvist
Ragnhild Ferm**

Distribution: UD (2 ex), UD Ambasaderna i Wien, Fö (2 ex), FHS, SIPRI (20 ex)
FOA: Program, Utland, FOA 4, FOA 6

Issuing organization Defence Research Establishment Division of Systems and Underwater Technology SE-172 90 STOCKHOLM Sweden	Document ref. No., ISRN FOA-R--00-01572-180--SE	
	Date of issue July 2000	Project No. E60011
	Project name (abbrev. if necessary)	
Author(s) Nils-Olov Bergkvist Ragnhild Ferm	Initiator of sponsoring organization	
	Project manager Nils-Olov Bergkvist	
	Scientifically and technically responsible Nils-Olov Bergkvist and Ragnhild Ferm	
Document title Nuclear Explosions 1945 - 1998		
Abstract <p>The main part of this report is a list of nuclear explosions conducted by the United States, the Soviet Union, the United Kingdom, France, China, India and Pakistan in 1945–98. The list includes all known nuclear test explosions and is compiled from a variety of sources including officially published information from the USA, Russia and France. The details given for each explosion (date, origin time, location, yield, type, etc.) are often compiled from more than one source because the individual sources do not give complete information. The report includes a short background to nuclear testing and provides brief information on the Comprehensive Nuclear-Test-Ban Treaty (CTBT) and the verification regime now being established to verify compliance with the treaty. It also summarizes nuclear testing country by country. The list should be used with some caution because its compilation from a variety of sources means that some of the data could be incorrect. This report is the result of cooperation between the Defence Research Establishment (FOA) and the Stockholm International Peace Research Institute (SIPRI).</p> <p>An electronic version of the list may be obtained from FOA on request.</p>		
Key words Explosion, nuclear, atomic, bomb, atmospheric, underground, device, weapon, treaty, seismic		
Further bibliographic information	Language English	
ISSN 1104-9154	ISBN	
	Pages 42 p.	Price Acc. to pricelist
Distributor (if not issuing organization)		

Dokumentets utgivare Försvarets forskningsanstalt Avdelningen för Styrning, simulering och undervattensteknik 172 90 STOCKHOLM	Dokumentbeteckning, ISRN FOA-R--00-01572-180--SE	
	Dokumentets datum Juli 2000	Uppdragsnummer E60011
	Projektnamn (ev förkortat)	
Upphovsman(män) Nils-Olov Bergkvist Ragnhild Ferm	Uppdragsgivare	
	Projektansvarig Nils-Olov Bergkvist	
	Fackansvarig Nils-Olov Bergkvist och Ragnhild Ferm	
Dokumentets titel i översättning Kärnladdningsexplosioner 1945 - 1998		
Sammanfattning Huvudsyftet med denna rapport är att i komprimerad form redovisa en fullständig lista över kärnladdnings- explosioner som genomförts av USA, Sovjetunionen, Storbritannien, Frankrike, Kina, Indien och Pakistan under tiden 1945–98. Listan baseras på ett flertal källor, inklusive officiell information från USA, Ryssland och Frankrike. Eftersom källorna var för sig inte ger en komplett bild, är den information som redovisas för varje explosion (datum, källtid, lokalisering, laddningsstyrka, typ etc.) ofta hämtad från flera källor. Rapporten innehåller också en kortfattad historik över ländernas provverksamhet och en summering av provstoppsavtalet samt en sammanställning av antalet kärnexplosioner utförda av de sju staterna. Informationen i listan bör användas med viss försiktighet, eftersom uppgifterna har hämtats in från många olika källor och viss informa- tion kan vara felaktig. Vissa korrekturfel i listan är oundvikliga. Rapporten är resultatet av ett samarbete mellan Försvarets forskningsanstalt (FOA) och Stockholms internationella fredsforskningsinstitut (SIPRI). Listan finns tillgänglig i elektronisk form på FOA.		
Nyckelord Explosion, nukleär, atom, bomb, atmosfärisk, underjordisk, laddning, vapen, fördrag, radioaktivitet		
Övriga bibliografiska uppgifter	Språk Engelska	
ISSN 1104-9154	ISBN	
	Omfång 42 s	Pris Enl prislista

Distributör (om annan än ovan)

Contents

Preface

1. BACKGROUND INFORMATION ON NUCLEAR EXPLOSIONS

- 1.1. Introduction
- 1.2. Types of nuclear explosion
- 1.3. US nuclear explosions
- 1.4. Soviet nuclear explosions
- 1.5. British nuclear explosions
- 1.6. French nuclear explosions
- 1.7. Chinese nuclear explosions
- 1.8. Indian and Pakistani nuclear explosions
- 1.9. South Africa
- 1.10. Moratoria
- 1.11. An international treaty on a comprehensive ban on nuclear testing

2. SUMMARY OF NUCLEAR TESTS, 1945–98

3. INTRODUCTION TO THE DATA ON NUCLEAR EXPLOSIONS

- 3.1. Definitions
- 3.2. Key to data
- 3.3. Sources

4. DATA ON NUCLEAR EXPLOSIONS, 1945–98

Appendix 1. Footnotes—USA

Appendix 2. Footnotes—USSR

Appendix 3. Footnotes—UK

Appendix 4. Footnotes—France

Appendix 5. Footnotes—China

Appendix 6. Footnotes—India

Appendix 7. Footnotes—Pakistan

PREFACE

Discussions between the authors of this report about the annual numbers of nuclear tests conducted since 1945 finally led to a joint undertaking to compile a list of nuclear explosions that would satisfy us both. Our aim was also to present as much information as possible concerning the tests. While the list presented here draws on a wide range of sources, the core data are those compiled by FOA, which were first computerized in the early 1980s (when Tom Francke compiled an ASCII file based on various paper sources). During the past few years more and more information on tests has become available as various authoritative sources have published data based on declassified documents and information on nuclear powers' testing programmes. This has enabled us to make our list more accurate.

Brief background information on nuclear explosions and a country-by-country summary of testing activity is also included. The report is intended for a broad audience, and it is hoped that it will stimulate further research and debate on nuclear testing and test ban issues.

The authors would like to thank Eva Norrbrand for managing the production of the report and Billie Bielckus for editorial assistance.

1. BACKGROUND INFORMATION ON NUCLEAR EXPLOSIONS

1.1. INTRODUCTION

More than 2000 nuclear explosions have been conducted since 1945. Nuclear weapons have been used twice in war: by the USA in August 1945, at the end of World War II, on the Japanese cities of Hiroshima and Nagasaki.

Most of the other nuclear explosions have been detonations intended to test the construction of the devices (weapon tests) or their effect.

No atmospheric tests have been conducted by the USA, the Soviet Union/Russia or the UK since 1963, when the Treaty Banning Nuclear Weapon Tests in the Atmosphere, in Outer Space and Under Water (the Partial Test Ban Treaty, PTBT) was signed. France confined its activities to underground testing from 1974, and China from 1980. Before 1963 a few tests were also conducted under water.

The Comprehensive Nuclear-Test-Ban Treaty (CTBT), signed in 1996, has not yet entered into force.

1.2. TYPES OF NUCLEAR EXPLOSION

Nuclear explosions can be divided into two main categories: atmospheric and underground. In the atmospheric tests the device was placed in a tower or on a boat, dropped from an aeroplane or a balloon, fired by a missile or detonated on the ground. All these tests led to the spread of radioactive debris in the upper layers of the atmosphere, which then fell to the ground, often over very wide areas.

Underground tests have been conducted in tunnels or deep shafts. A hole (up to *c.* 1 km deep for larger devices, a few hundred metres for smaller ones) was drilled into the bedrock, and the nuclear devices and measuring instruments were placed in the bottom. The entire borehole was refilled to prevent radioactive material from leaking out. The explosion was registered by the monitoring instruments on the container microseconds before they were destroyed. The heat of the explosion melted and vaporized the bedrock, and the pressure created a cavity and caused vibrations in the ground. A crater was usually formed, its size depending on the kind of rock and the yield of the explosion.

Sometimes underground tests also led to the discharge of radioactivity. In Sweden during the period 1966–90 the Defence Research Establishment (FOA), which has monitored airborne radioactivity from nuclear detonations since the 1950s, registered the leakage of radiation from six Soviet and two US underground nuclear tests (in violation of the PTBT). The nuclear weapon states presumably have information on more discharges of radioactivity in their registers. The French test site in Polynesia lies too far away to be monitored from Sweden, but radioactive materials from the southern Pacific Ocean have been collected and examined in Sweden.

NUCLEAR DEVICES

There are two main kinds of nuclear device: those based entirely on fission, or the splitting of heavy atomic nuclei (previously known as *atomic devices*) and those in which the main energy is obtained by means of fusion, or of light atomic nuclei (*hydrogen* or *thermonuclear devices*). A fusion explosion must however be initiated with the help of a fission device. The strength of a fusion explosion can be practically unlimited. The explosive power of a nuclear explosion is expressed in kilotons (kt) or megatons (Mt), which correspond to 1000 and 1 million tonnes of conventional explosive (TNT), respectively.

So-called peaceful nuclear explosions (PNEs) have also been carried out. They were often conducted outside the usual test sites and it was claimed that they were for civil purposes. There is no major distinction between nuclear devices detonated for civil or for military purposes, and it should be pointed out that even so-called peaceful nuclear explosions could provide valuable experience for weapon development.

1.3. US NUCLEAR EXPLOSIONS

The first nuclear weapon test was conducted in the USA—at Alamogordo, New Mexico, on 16 July 1945—and was a result of the so-called Manhattan Project, which had been underway since 1942. It was a plutonium device that was tested, and the same construction was to be used some weeks later in the bombing of Nagasaki, a port in south-west Japan. Three days earlier, on 6 August, the USA had

dropped the first atomic bomb, a uranium bomb, on Hiroshima, another port in south-west Japan. The Hiroshima bomb had not been tested before it was used in war.

Nuclear weapon development continued in the USA and tests were conducted in 1946–62 at various atolls and islands in the Pacific Ocean. The first hydrogen bomb was tested in 1951, at Enewetak Atoll, then part of a UN Trust territory administered by the USA, now part of the Marshall Islands. Only small groups among those working on the tests knew how harmful the fall-out from the explosions was for people and the environment. Certain atolls used for the US tests in the 1950s are still uninhabitable today because of the radioactivity.

The need for a closer testing ground grew as the US nuclear weapon programme expanded. There was also a desire to reduce the cost of the testing activity. The Nevada test site was first used in 1951, but the tests in the Pacific Ocean continued up to November 1962. At first atmospheric tests were also held in Nevada (with consequences for people and the environment there too), but there was a gradual transition to solely underground testing.

A programme for civil nuclear explosions, the *Plowshare* project, was started in 1957. The first explosion was conducted in 1961, the last in 1973. The idea was to investigate whether the military capacity could be converted to civil purposes ('swords to ploughshares'). For example there were plans to blast a new Panama Canal, with no locks. The *Plowshare* project was abandoned in the mid-1970s. It became apparent that it was impossible to benefit from the peaceful nuclear explosions for a reasonable cost without destroying the environment. The USA also conducted seven so-called *Vela Uniform* tests, designed to detect, identify and locate nuclear explosions.

The USA last tested a nuclear device in September 1992. To maintain the skills of those working at the test site and to control the reliability of its existing nuclear weapons the USA is carrying out so-called subcritical tests at the Nevada Test Site.¹

¹ Subcritical tests use conventional high explosives to create high pressures on nuclear weapon material without allowing it to become critical (i.e., a self-sustaining nuclear fission chain reaction). Protests have been raised by those who claim that although subcritical tests are not forbidden by the 1996 Comprehensive Nuclear Test-Ban Treaty (CTBT), they violate the spirit and aims of the treaty because they may contribute to the improvement of weapon designs.

NUCLEAR WEAPON STATES

In the Non-Proliferation Treaty a nuclear weapon state is defined as 'a state which has manufactured and exploded a nuclear weapon or other nuclear explosive device prior to 1 January, 1967'. The USA, the Soviet Union/Russia, the UK, France and China meet this criterion. They are often called the 'established' or 'NPT-defined' nuclear weapon states. With their nuclear explosions in May 1998 India and Pakistan demonstrated their ability to develop nuclear weapons and declared themselves nuclear weapon states. This claim has been rejected, however, by the international community.

1968 NON-PROLIFERATION TREATY

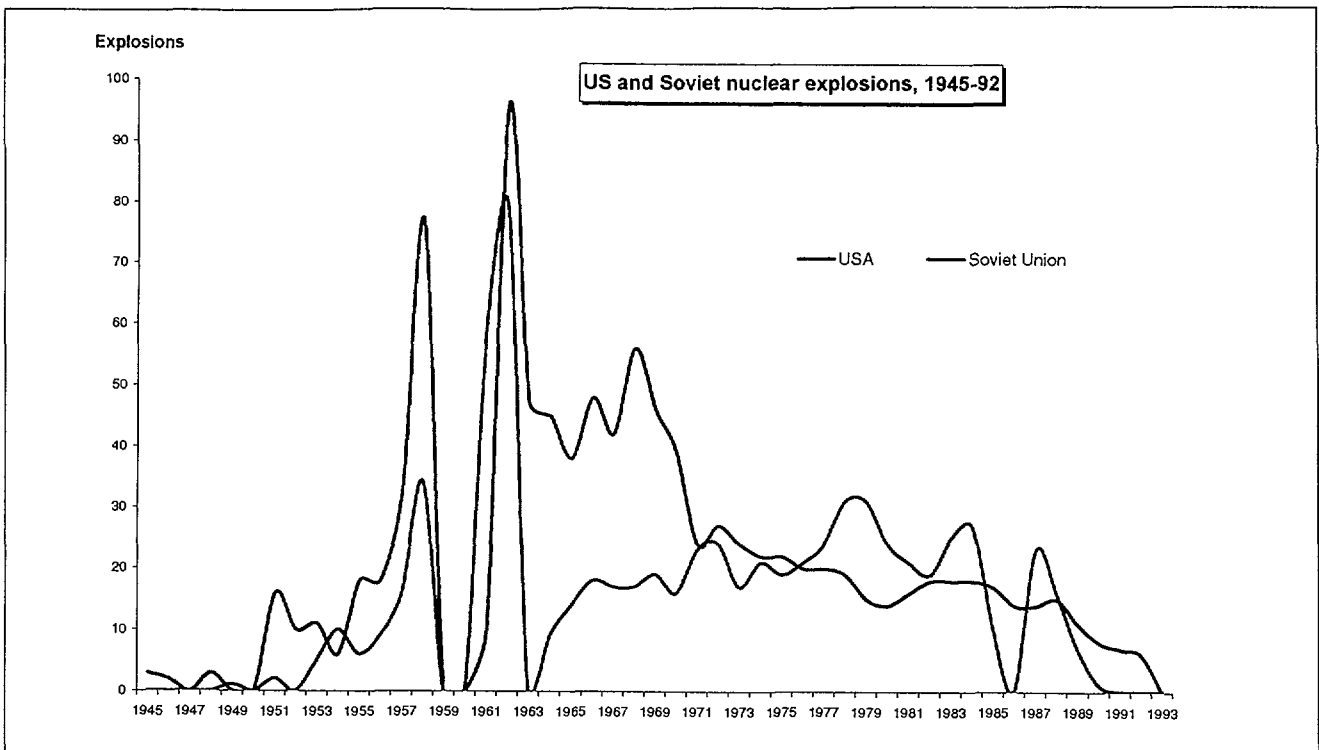
Under the Treaty on the Non-Proliferation of Nuclear Weapons (the Non-Proliferation Treaty, NPT), the nuclear weapon states undertake not to transfer nuclear weapons or other nuclear explosive devices or control over them to any recipient whatsoever, and not to assist, encourage or induce any non-nuclear weapon state to manufacture or otherwise acquire nuclear weapons. The parties also pledge to work towards nuclear disarmament.

Non-nuclear weapon states undertake not to accept nuclear weapons or other nuclear devices and not to manufacture or otherwise acquire nuclear weapons and not to seek or receive any assistance for their manufacture.

A non-nuclear weapon state party to the treaty shall enter an agreement with the International Atomic Energy Agency (IAEA) on opening up its nuclear energy sector to control. The IAEA shall monitor that no significant amount of fissionable material goes astray. Non-nuclear weapon states parties to the treaty are guaranteed the right to develop research, production and use of nuclear energy for peaceful purposes.

The USA has conducted 1032 nuclear explosions:

- 2 atomic bombs dropped on Hiroshima and Nagasaki
- 106 tests in the Pacific Ocean (101 atmospheric, 5 underwater)
- 3 tests in the southern Atlantic (in the atmosphere)
- 904 tests at the Nevada Test Site (100 in the atmosphere, 804 underground)
- 17 underground explosions at other locations in the USA
- (The USA also cooperated in the 24 tests conducted by the UK at the Nevada Test Site)



1.4. SOVIET NUCLEAR EXPLOSIONS

The Soviet Union carried out its first nuclear explosion on 29 August 1949, and thus the nuclear arms race was initiated. In August 1953 the first Soviet hydrogen bomb test was conducted. The USSR conducted a number of very high yield explosions in the atmosphere in 1961–62. No official details on the size of the tests were published by the Soviet side then, but it was known for example that the test conducted on 30 October 1961, over the Novaya Zemlya archipelago in the Barents Sea, had a yield of about 50 megatons. (The Hiroshima bomb was calculated to have had a yield of 12–15 kilotons.) Most of the Soviet explosions were carried out at the Semipalatinsk test site in eastern Kazakhstan. It has been reported that radioactive materials leaked out from many of the underground explosions there, in c. 40 cases in large amounts. When Kazakhstan became an independent state the test site was closed (1991). In 1993, 1994 and 1998 the International Atomic Energy Agency (IAEA), at the request of Kazakhstan, made investigations at the former test site. Elevated residual radioactivity levels were found in areas where surface tests had been conducted and where underground tests had leaked to the atmosphere. The other Soviet test site, on Novaya Zemlya, is located on Russian territory and

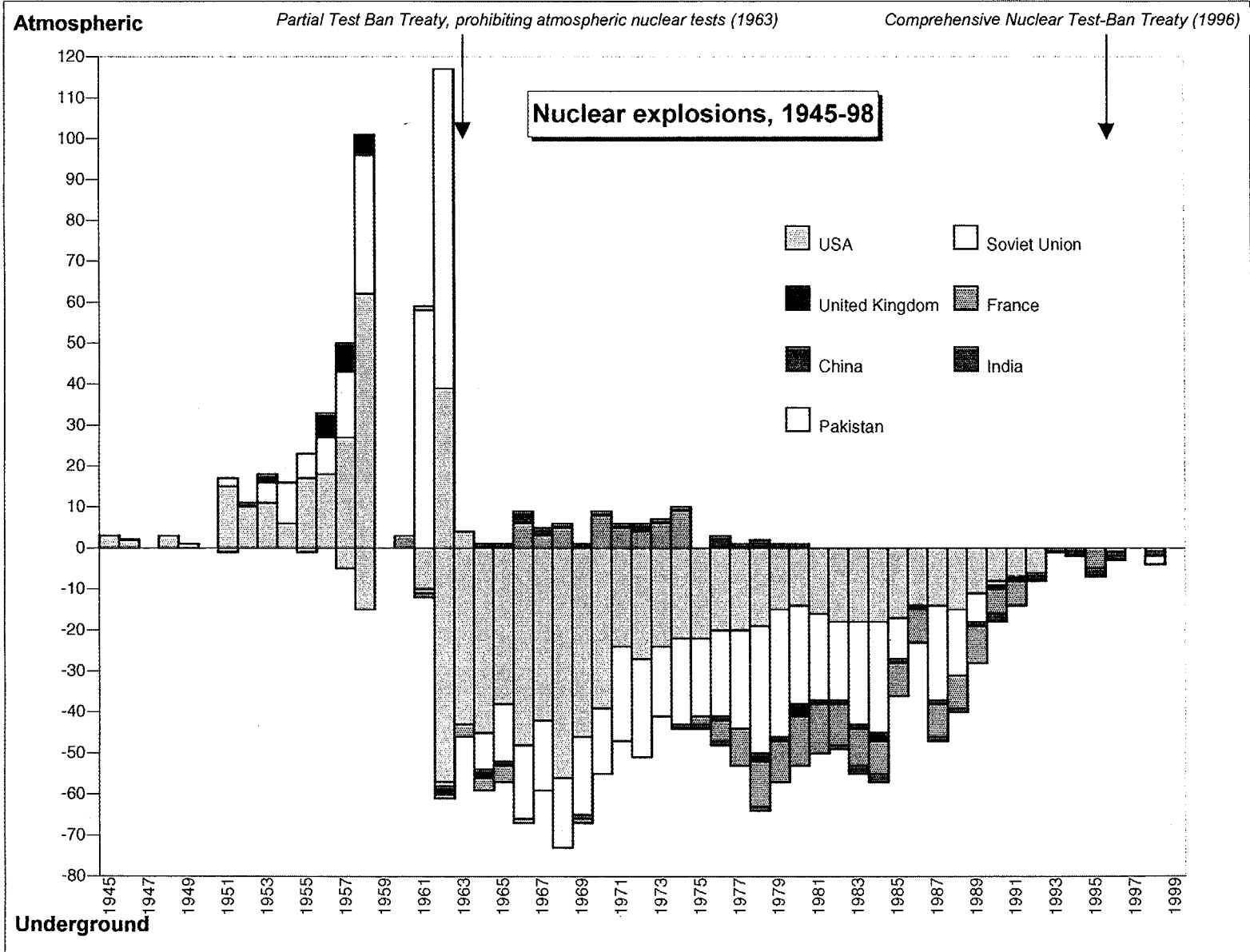
still exists, but since Russia ceased nuclear testing (1990) it has only been used for subcritical tests.

The Soviet Union conducted more than 120 peaceful nuclear explosions (PNEs), the last in September 1988. The explosions were carried out, for example, to obtain seismological information on mineral resources, to create underground rock cavities for gas reservoirs or to excavate channels to combine rivers (this was unsuccessful). The PNEs were very damaging to the environment and human beings because radioactive particles eventually made their way to the surface.

The Soviet Union was dissolved in 1991, and Russia took over the Soviet nuclear weapon programme. Russia has conducted neither nuclear weapon tests nor any peaceful nuclear explosions. Subcritical tests have been carried out since 1995.

The Soviet Union conducted 715 nuclear explosions:

- 456 at the Semipalatinsk test site (116 in the atmosphere and 340 underground)
- 130 on Novaya Zemlya (88 in the atmosphere, 3 underwater and 39 underground)
- 129 at various other places in the USSR—in Russia (e.g., in the Arkhangelsk, Astrakhan, Krasnoyarsk and Murmansk regions), Kazakhstan, Turkmenistan, Ukraine and Uzbekistan—most of them for civil purposes.



1.5. BRITISH NUCLEAR EXPLOSIONS

British scientists took part in the US Manhattan Project, which created the first nuclear explosive devices. Their cooperation with the USA was broken off at the end of World War II, and the UK's nuclear weapon development continued as a British project. Australia was chosen as the location for tests, and the first British nuclear weapon test was carried out in October 1952, at the Monte Bello Islands off the north-west coast of Australia. Further tests were held there, and also on the Australian mainland. It was later evident that people—mainly aborigines—and the environment suffered considerable damage as a result of the fall-out from the tests in Australia. An Australian Commission was established in 1984 to investigate the circumstances surrounding the tests. Testing activities also took place on the British possessions Malden Island and Christmas Island (now Kiribati) in the Pacific Ocean. Several hydrogen bomb tests were conducted there in 1957–58.

Since March 1962 the UK used the US test site in the Nevada Desert for nuclear weapon tests in cooperation with the USA. The UK only conducted underground tests there; the last one was in November 1991. The testing programme was discontinued after 1992 because of the US moratorium.

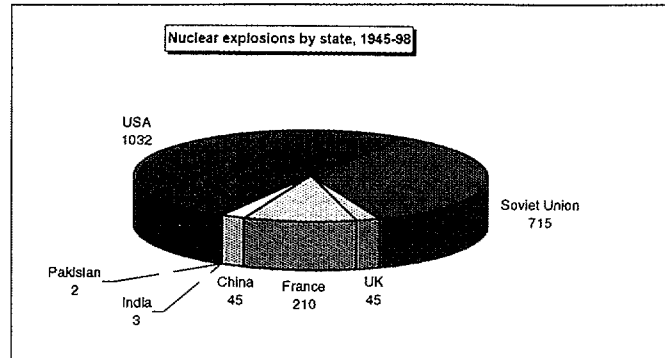
The UK has conducted 45 nuclear explosions:

- 12 atmospheric tests in Australia
- 9 atmospheric tests in the Pacific Ocean (Malden Island and Christmas Island)
- 24 underground tests (in cooperation with the USA) in Nevada

1.6. FRENCH NUCLEAR EXPLOSIONS

In 1958 President de Gaulle decided that France would develop its own nuclear weapons, and nuclear cooperation with other Western powers was cancelled. Algeria, then a French possession, was chosen as the location for the tests, and the first explosion took place there in February 1960. In total France conducted 17 tests in Algeria, the first four in the atmosphere, at Reganne in the Sahara Desert. These tests were conducted during a period when the

other nuclear weapon powers were observing a moratorium, and France was therefore criticized internationally. This was probably one reason why the next 13 tests in Algeria (1961–66) were conducted underground, at In Ecker, some 500 km south-east of Reganne.



Algeria became independent in 1962 and France was forced to end its testing activity there. A new test site was created at the Mururoa Atoll in French Polynesia, and atmospheric explosions were resumed there in 1966. The Fangataufa Atoll, *circa* 40 km south-west of Mururoa, was also used. The first French hydrogen bomb was tested there in August 1968. After 1974 France conducted underground nuclear explosions instead, a concession to international criticism.

In the beginning the underground tests on Mururoa and Fangataufa were conducted in boreholes in the ground, but as the holes became more numerous and it was feared that this would damage the atoll, holes were bored beneath the lagoon of the atoll instead. The bedrock in an atoll is composed of basalt, a more brittle rock than granite, which is the bedrock in the areas where the Soviet Union conducted its underground tests, for example. Over the years France was criticized throughout the world for locating its testing activity in an area far from the mainland, where it was the local population that suffered from the damage to the environment and human life. The possible damages to the marine environment have been discussed, and France commissioned the IAEA to investigate the Mururoa and Fangataufa atolls. The study concluded that the sediments in the lagoons contained several kilograms of residual plutonium, and that elevated levels of caesium-137 remained in small areas of the atolls. However, it was stated that the residual radioactive material was not expected to have any measurable health effects on individuals or groups.

After its last test, in January 1996, France wound down its facility in French Polynesia. The test site was officially closed in 1999. Thus France is the first nuclear weapon state to really shut down its test sites.

France has conducted 210 nuclear explosions:

- 17 in Algeria (4 atmospheric tests at Reganne, and 13 underground tests at In Ecker)
- 193 in French Polynesia (42 atmospheric tests and 138 underground tests at Mururoa and 4 atmospheric and 9 underground tests at Fangataufa)

1.7. CHINESE NUCLEAR EXPLOSIONS

China conducted its first nuclear weapon test in October 1964. The country had then had a nuclear weapon programme for nearly 10 years, initially with Soviet support. When the relationship between the two powers deteriorated at the end of the 1950s China had to rely wholly on its own resources. The development of a nuclear weapon capability was given highest priority, and despite the country's great poverty and lack of scientific expertise the programme was carried through.

All China's nuclear explosions have been carried out in the Lop Nor area, a desert in the Sinkiang province of Western China. Its first hydrogen bomb test was conducted in 1966. China conducted all its tests in the atmosphere until 1980, when it changed to underground testing. That China accounts for some 2 per cent of the world's nuclear explosions has been emphasized by the Chinese Government on a number of occasions.

In July 1996, approximately two months before it signed the Comprehensive Nuclear-Test-Ban Treaty (CTBT), China announced that it would cease testing.

China has conducted 45 nuclear explosions,

- all at the Lop Nor test site:
- 23 atmospheric tests
- 22 underground tests

1.8. INDIAN AND PAKISTANI NUCLEAR EXPLOSIONS

India and Pakistan are not numbered among the five established nuclear weapon states. They have chosen to remain outside the NPT regime and, like Israel, have sites not controlled by the IAEA at which fissionable material for weapon production could be produced. All three have therefore been defined as threshold states. India exploded a nuclear device in 1974, at Pokhran in the Rajasthan desert in eastern India. It was claimed to have had a peaceful purpose.

On 11 and 13 May 1998 India conducted a series of nuclear weapon explosions at the Pokhran test site. At the end of the same month Pakistan responded with a further series of explosions. Pakistan's first test was conducted at the Ras Koh test site, in the Chagai Mountains in Baluchistan, near the Afghan border. The second test took place c. 100 km south-west of Ras Koh, in the Kharan desert. The tests were greeted by international criticism because it was felt that they counteracted the efforts to extend the test ban treaty to all states. India later declared that it would observe a moratorium on testing. Pakistan has promised that it will also do so as long as India does not break its moratorium. Neither country has yet (1 July 2000) signed the CTBT.

1.9. SOUTH AFRICA

South Africa announced in 1993 that the country had had a nuclear weapon programme during the 1970s and 1980s, but that the six devices that had been produced had since been destroyed. In September 1979 a mysterious double flash was observed over the ocean south of South Africa at the same time as a US satellite registered signals that could indicate a nuclear explosion. There was speculation that South Africa and/or Israel could have been behind the possible explosion. No radioactive fall-out was noted. South Africa has stated that the country has never conducted a nuclear explosion. It is now a party to the NPT and has signed and ratified the CTBT.

1.10. MORATORIA

Over the years the individual nuclear weapon states have undertaken voluntary halts (moratoria) in their testing activity. The UK, the USA and the USSR observed such a moratorium from November 1958 to September 1961. President Gorbachev announced a moratorium in July 1985 but, as the USA never took part, both weapon tests and civil nuclear explosions were resumed in February 1987. A new Soviet moratorium began in October 1990. After the dissolution of the Soviet Union it was extended by the Russian Government, which declared that no further nuclear weapon tests would be conducted as long as the political situation did not deteriorate.

In 1992 President Bush declared a 9-month halt to US nuclear testing. President Clinton extended the moratorium to September 1994 or beyond, under the condition that no other state conducted a test explosion. Despite China resuming its test programme, and despite France conducting its series of tests in September 1995–January 1996, the USA chose not to resume testing.

The French moratorium (July 1991–September 1995) was followed by a further six tests. After the last of the series, January 1996, President Chirac declared the French nuclear test programme to be completed. After its test on 29 July 1996 China announced a halt to its testing activity for the first time.

Even though the moratoria did not significantly slow weapon developments they had an influence on public opinion and became a condition for the real test ban negotiations to be finally concluded.

1.11. AN INTERNATIONAL TREATY ON A COMPREHENSIVE BAN ON NUCLEAR TESTING

A ban on nuclear weapon testing was an important disarmament issue for more than 40 years, since tests were a prerequisite for the development of nuclear weapons, and test explosions were seen as a clear expression of the nuclear arms race. Furthermore, the tests spread radioactive materials. India's Prime Minister Nehru put forward a proposal for a ban to the UN in 1954. The treaties and agreements that were later reached, however, only limited the

test activity in various ways, and nuclear weapon development was not slowed down.²

Negotiations on a comprehensive ban on nuclear testing started in January 1994 at the Conference on Disarmament (CD) in Geneva. Because of the generally improved political climate, for the first time the five nuclear weapon states were willing to aim for an all-embracing ban on nuclear weapon tests. The five states reached agreement that the ban should apply to all types of nuclear explosion, even peaceful ones, and even explosions of very low yield.

The Comprehensive Test-Ban-Treaty (CTBT) was signed in September 1996. It consists of 17 articles and a separate protocol on the details of verification.

In Article I the states parties commit themselves not to carry out any nuclear weapon test or any other nuclear explosion and to refrain from participating in the carrying out of any nuclear explosion.

The *CTBT Organization* was established as an independent body with its seat in Vienna (Article II). The Organization includes a Conference, an Executive Council and a Technical Secretariat.

Article IV deals with the verification of the treaty.

An *International Monitoring System (IMS)*, under the authority of the Technical Secretariat, will comprise facilities based on four different technologies: seismological monitoring, hydroacoustic monitoring (to register pressure waves in the world's oceans), infrasound monitoring and the measurement of radioactive particles in the atmosphere. An International Data Centre (IDC), which is an integral part of the Technical Secretariat, is to be responsible for dealing with and compiling the incoming raw data from the monitoring stations and sending out information to the states parties to the treaty.

An important element of the verification regime of the treaty is the right to conduct on-site inspections. If it is the assessment of a state party that information collected by the IMS indicates that a nuclear explosion might have occurred the national authority of that state has the right to request the Executive Council to initiate an on-site inspection.

The treaty is of unlimited duration (Article IX), but as in many other treaties there is a clause stating

² 1963 Treaty Banning Nuclear Weapon Tests in the Atmosphere, in Outer Space and Under Water (Partial Test Ban Treaty, PTBT); 1974 US–Soviet Treaty on the Limitation of Underground Nuclear Weapon Tests (Threshold Test Ban Treaty, TTBT); and 1976 US–Soviet Treaty on Underground Nuclear Explosions for Peaceful Purposes (Peaceful Nuclear Explosions Treaty, PNET).

that a state party may withdraw if it decides that the treaty jeopardizes its supreme interests.

Article XIV states that the treaty shall enter into force 180 days after the deposit of instruments of ratification by 44 listed CD member states. All countries that according to the IAEA have nuclear reactors are on the list, including India, Israel and Pakistan, the three threshold states.

A test ban does not have the same significance today for the proliferation of nuclear weapons as it would have had if it had been achieved during an earlier stage of nuclear weapon development. With modern technology and economic resources it is now possible for states to produce simple fission devices (however, without being completely certain they will function as intended) without test explosions. Developing hydrogen bombs without testing would be more difficult, however.

A special conference on facilitating the entry into force of the CTBT, in accordance with Article 14.2 of the Treaty, was held in October 1999, but it was not conclusive.

The treaty bans only actual physical explosions, not subcritical tests or computer-simulated tests. This means that even after entry into force of the complete ban, the nuclear powers will be permitted to verify the safety and reliability of their nuclear weapon arsenals. Moreover, in the opinion of experts, the CTBT cannot prevent any state aspiring for nuclear status from constructing, without explosive testing, a small arsenal of fission weapons, and doing so with some degree of certainty that the weapons will perform as envisaged. It is, however, considerably more difficult to develop thermo-nuclear weapons without test explosions.

It is very unlikely that the CTBT will enter into force in the near future. Of the nuclear weapon states France, Russia and the UK have ratified the treaty. However, the US Senate voted against ratification, in October 1999.

The states that have signed the CTBT, however, have in practice renounced nuclear explosions even

before the treaty has become effective. Given the large number of countries approving the CTBT, it is evident that it enjoys strong support in world public opinion. The international monitoring system is partly in operation, and a Preparatory Commission has been established and meets regularly.

155 countries have signed the treaty, but these do not include India, Israel or Pakistan. North Korea is another significant non-signatory of the CTBT—although it is an NPT state party it has been suspected of having nuclear facilities in violation of the treaty. By 1 July 2000, 59 states had ratified the treaty (including 29 of the required 44).

The 44 states whose ratification of the CTBT is required for entry into force are:

Algeria, Argentina, Australia, Austria, Bangladesh, Belgium, Brazil, Bulgaria, Canada, Chile, China, Colombia, Congo (Democratic Republic of), Egypt, Finland, France, Germany, Hungary, India, Indonesia, Iran, Israel, Italy, Japan, Korea (North), Korea (South), Mexico, Netherlands, Norway, Pakistan, Peru, Poland, Romania, Russia, Slovakia, South Africa, Spain, Sweden, Switzerland, Turkey, UK, Ukraine, USA and Viet Nam

(States in bold text had ratified the treaty as of 1 July 2000.)

Note:

This Introduction draws extensively on SIPRI Fakta-
blad, december 1996: Internationellt förbud mot
kärnsprängningar, written by Ragnhild Ferm, and on
material published in SIPRI Yearbooks since 1990.
It was translated by Billie Bielckus.

2. SUMMARY OF NUCLEAR TESTS, 1945–98

The list includes all nuclear tests (as defined in section 3.1) conducted in nuclear weapon programmes, PNEs and French, Soviet and US (not British) safety experiments, and the two atomic bombs dropped on Japan in 1945.

a = atmospheric (or in a few cases under water); u = underground.

Year	USA ^a		USSR/Russia		UK ^a		France		China		India		Pakistan		Total
	a	u	a	u	a	u	a	u	a	u	a	u	a	u	
1945	3	–	–	–	–	–	–	–	–	–	–	–	–	–	3
1946	2 ^b	–	–	–	–	–	–	–	–	–	–	–	–	–	2
1947	–	–	–	–	–	–	–	–	–	–	–	–	–	–	0
1948	3	–	–	–	–	–	–	–	–	–	–	–	–	–	3
1949	–	–	1	–	–	–	–	–	–	–	–	–	–	–	1
1950	–	–	–	–	–	–	–	–	–	–	–	–	–	–	0
1951	15	1	2	–	–	–	–	–	–	–	–	–	–	–	18
1952	10	–	–	–	1	–	–	–	–	–	–	–	–	–	11
1953	11	–	5	–	2	–	–	–	–	–	–	–	–	–	18
1954	6	–	10	–	–	–	–	–	–	–	–	–	–	–	16
1955	17 ^b	1	6 ^b	–	–	–	–	–	–	–	–	–	–	–	24
1956	18	–	9	–	6	–	–	–	–	–	–	–	–	–	33
1957	27	5	16 ^b	–	7	–	–	–	–	–	–	–	–	–	55
1958	62 ^c	15	34	–	5	–	–	–	–	–	–	–	–	–	116
1959	–	–	–	–	–	–	–	–	–	–	–	–	–	–	0 ^d
1960	–	–	–	–	–	–	3	–	–	–	–	–	–	–	3 ^d
1961	–	10	58 ^b	1	–	–	1	1	–	–	–	–	–	–	71 ^d
1962	39 ^b	57	78	1	–	2	–	1	–	–	–	–	–	–	178
1963 ^e	4	43	–	–	–	–	–	3	–	–	–	–	–	–	50
1964	–	45	–	9	–	2	–	3	1	–	–	–	–	–	60
1965	–	38	–	14	–	1	–	4	1	–	–	–	–	–	58
1966	–	48	–	18	–	–	6	1	3	–	–	–	–	–	76
1967	–	42	–	17	–	–	3	–	2	–	–	–	–	–	64
1968	–	56	–	17	–	–	5	–	1	–	–	–	–	–	79
1969	–	46	–	19	–	–	–	–	1	1	–	–	–	–	67
1970	–	39	–	16	–	–	8	–	1	–	–	–	–	–	64
1971	–	24	–	23	–	–	5	–	1	–	–	–	–	–	53
1972	–	27	–	24	–	–	4	–	2	–	–	–	–	–	57
1973	–	24	–	17	–	–	6	–	1	–	–	–	–	–	48
1974	–	22	–	21	–	1	9	–	1	–	–	1	–	–	55
1975	–	22	–	19	–	–	–	2	–	1	–	–	–	–	44
1976	–	20	–	21	–	1	–	5	3	1	–	–	–	–	51
1977	–	20	–	24	–	–	–	9	1	–	–	–	–	–	54
1978	–	19	–	31	–	2	–	11	2	1	–	–	–	–	66
1979	–	15	–	31	–	1	–	10	1	–	–	–	–	–	58
1980	–	14	–	24	–	3	–	12	1	–	–	–	–	–	54
1981	–	16	–	21	–	1	–	12	–	–	–	–	–	–	50
1982	–	18	–	19	–	1	–	10	–	1	–	–	–	–	49
1983	–	18	–	25	–	1	–	9	–	2	–	–	–	–	55
1984	–	18	–	27	–	2	–	8	–	2	–	–	–	–	57
1985	–	17	–	10	–	1	–	8	–	–	–	–	–	–	36 ^f
1986	–	14	–	–	–	1	–	8	–	–	–	–	–	–	23 ^f
1987	–	14	–	23	–	1	–	8	–	1	–	–	–	–	47 ^f
1988	–	15	–	16	–	–	–	8	–	1	–	–	–	–	40
1989	–	11	–	7	–	1	–	9	–	–	–	–	–	–	28
1990	–	8	–	1	–	1	–	6	–	2	–	–	–	–	18

Year	USA ^a		USSR/Russia		UK ^a		France		China		India		Pakistan		Total
	a	u	a	u	a	u	a	u	a	u	a	u	a	u	
1991	-	7	-	-	-	1	-	6	-	-	-	-	-	-	14
1992	-	6	-	-	-	-	-	-	-	2	-	-	-	-	8 ^g
1993	-	-	-	-	-	-	-	-	-	1	-	-	-	-	1 ^g
1994	-	-	-	-	-	-	-	-	-	2	-	-	-	-	2 ^g
1995	-	-	-	-	-	-	-	5	-	2	-	-	-	-	7 ^g
1996	-	-	-	-	-	-	-	1	-	2	-	-	-	-	3
1997	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0
1998	-	-	-	-	-	-	-	-	-	-	-	2	-	2	4
Subtotal	217	815	219	496	21	24	50	160	23	22	-	3	-	2 2	052
Total	1 032		715		45		210		45		3		2	2 052	

^a All British tests from 1962 were conducted jointly with the USA at the Nevada Test Site, so the number of US tests is actually higher than indicated here. The British Labour Government observed a unilateral moratorium on testing in 1965-74.

^b One of these tests was carried out under water.

^c Two of these tests were carried out under water.

^d The UK, the USA and the USSR observed a moratorium on testing in the period Nov. 1958-Sep. 1961.

^e On 5 Aug. 1963 the USA, the USSR and the UK signed the Partial Test Ban Treaty (PTBT), prohibiting nuclear explosions in the atmosphere, in outer space and under water.

^f The USSR observed a unilateral moratorium on testing in the period Aug. 1985-Feb. 1987.

^g The USSR observed a moratorium on testing from Jan. 1991 and the USA from Oct. 1992; France observed a moratorium in the period Apr. 1992-Sep. 1995.

Source: Ferm, R., 'Nuclear explosions, 1945-98', *SIPRI Yearbook 1999: Armaments, Disarmament and International Security* (Oxford University Press: Oxford, 1999), pp. 562-63.

3. INTRODUCTION TO THE DATA ON NUCLEAR EXPLOSIONS

3.1. DEFINITIONS

The list provides details of all nuclear explosions, including those conducted in nuclear weapon test programmes, explosions carried out for peaceful purposes (PNEs) and the two atomic bombs dropped on Hiroshima and Nagasaki in 1945. Safety experiments, irrespective of whether they caused a nuclear explosion or not, carried out by the USA, the Soviet Union and France (not the UK), are also included.

The yield of the explosions is estimated in kilotons (kt). One kiloton is the explosive yield of a nuclear device equivalent to 1000 tonnes of trinitrotoluene (TNT) high explosive.

Simultaneous underground detonations, sometimes called salvo explosions, were carried out both by the USA (1963–92) and the Soviet Union (1965–90).

In defining an underground nuclear test the definition of the 1990 Protocol to the 1974 US–Soviet Threshold Test Ban Treaty (TTBT, section I, para. 2) is used, which states that a test is ‘either a single nuclear explosion conducted at a test site, or two or more nuclear explosions conducted at a test site within an area delineated by a circle having a diameter of two kilometres and conducted within a total period of time of 0.1 second’. (For the Indian detonations on 11 May 1998 the precise data to determine whether they should be counted as one or two tests according to the TTBT definition are not yet available. On the basis of available information one test is listed in the table. The explosions announced by India on 13 May 1998 are also counted as one test, as are Pakistan’s five explosions on 28 May 1998.)

For the PNEs, the definition in the 1976 Peaceful Nuclear Explosions Treaty (PNET, Article II.a) is used: a PNE is ‘any individual or group underground nuclear explosion for peaceful purposes’. A ‘group explosion’ is defined as ‘two or more individual explosions for which the time interval between successive individual explosions does not exceed five seconds and for which the emplacement points of all explosives can be interconnected by straight line segments, each of which joins two emplacement points and each of which does not exceed 40 kilometres’.

Note: It is not possible to give consistent information on the tests of the respective states as the amount of details given by the sources varies. Thus, the US Department of Energy (DOE) provides more information, for example, on accidental releases of radioactivity, than do the official Russian and French authorities. China has published no information on its testing programme.

3.2. KEY TO DATA

0 or blank = Data not available, nil or negligible figure

The columns

Date is expressed as year, month and day of the month. The date listed is the Greenwich Mean Time (GMT) date for the explosion.

Origin time for the explosion is expressed as GMT: hour, minute, second and tenth of a second.

ID no. Identification number. Each explosion has its own unique identification number. It can be used for searching footnotes.

Country lists the state that carried out the explosion.

Region gives the name of the test site and/or the geographical region where the explosion was conducted.

Abbreviations:

AK	Alaska
ALG	Algeria
ARK	Arkhangelsk region
AUSTR	Australia
CO	Colorado
FALLON	Naval Air Station, Fallon, Nevada
IS	island
KAZAKH	Kazakhstan
KRASNO	Krasnoyarsk territory
MANGY	Mangyshlak
MARALI	Maralinga
MONTEB	Montebello
MS	Mississippi
MTR	Missile Testing Range (near Kapustin Yar, Astrakhan region, Russia).
MURM	Murmansk
NELLIS	Nellis Air Force Range, Nevada
NM	New Mexico
NTS	Nevada Test Site
NV	Nevada
NZ	Novaya Zemlya (Northern Test Site, in the Arctic Ocean, Russia)
RUSS	Russia
SEMI	Semipalatinsk test site (in east Kazakhstan)
STAVRO	Stavropol territory (Russia)
TURKMEN	Turkmenistan
UZBEK	Uzbekistan
V	Valley

Other names are also slightly abbreviated, but since they are easily recognizable they are not listed above.

Sou indicates source: One reliable source reporting the explosion is given for each event. However, the information given for most explosions listed in the table is compiled by reports from more than one source. For the sources and their codes, see section 2.3.

Lat and *Long* indicate latitude and longitude: the geographical coordinates for the place where the explosion was conducted. The location is often approximate. A negative latitude indicates south and a negative longitude indicates west.

mb and *Ms* indicate the body wave magnitude and the surface wave magnitude of the events as reported by the given source.

Depth estimates show, in kilometres, how deep in the ground the explosions were conducted. Some height estimates are also given to indicate the altitude at which atmospheric tests were conducted. A positive figure indicates depth, a negative figure indicates height.

Yield indicates the range of yield. For most explosions lower (l) and upper (u) yield estimates are given. If an exact yield is available the upper figure and lower figure are the same. Unless otherwise noted in the footnotes, for salvo explosions the yield estimate indicates the yield of each detonation in a test or a peaceful nuclear explosion.

Purpose

COMBAT = The two atomic bombs dropped over Hiroshima and Nagasaki in August 1945.

FMS (used for Soviet tests) = To study the phenomena of a nuclear explosion.

ME = Test conducted in the context of a military exercise with a real nuclear detonation. One such test (Soviet) was conducted, in 1954.

PNE = Peaceful nuclear explosion. The US PNEs were either in the Plowshare Programme (PNE:PLO) or Vela Uniform Tests (PNE:V). The Soviet PNEs include both industrial peaceful explosions and testing of PNE technologies as well as testing of industrial nuclear charges for use in peaceful activities.

SAM (used for Soviet tests) = Tests to study accidental modes and emergencies.

SE (used for French and US tests) = Tests to determine the safety of nuclear weapons in case of accident.

TRANSP = Transportation-storage purposes. (Four US tests conducted at Nellis Air Force Range in 1963.)

WE (used for British, French and US tests) = To evaluate the effects of a nuclear detonation on various targets.

WR = Weapons-related, i.e. related to the weapon development programme. (N.B. If no information on the purpose of a test is available WR is given in the table.)

Name gives the name of the event. Longer names are shortened and in some cases where the abbreviation cannot be readily interpreted the full name is given in a footnote.

Type refers to the method of deployment of the nuclear device:

There are two categories: atmospheric (ATMOSPH) and underground (UG). When no further details are available, only ATMOSPH or UG is given in the table.

When atmospheric explosions were conducted the device was dropped from a balloon (BALLOON) or an aircraft (AIRDROP), launched by a rocket (ROCKET), mounted at the top of a steel or wooden tower (TOWER), placed on a boat (BARGE), on the surface of the sea (WATERSURFACE), on the ground close to the earth's surface (SURFACE) or in a crater (CRATER). A few nuclear tests were conducted under water (UW).

Underground explosions were either conducted at the bottom of drilled or mined vertical holes or shafts (SHAFT) or in horizontal tunnels (TUNNEL or GALLERY) drilled into a mountain or mesa in a way that places the burst point deep within the earth. One Soviet PNE was conducted in a mine (MINE).

French underground tests in Polynesia were either conducted in wells in the ground (SHAFT/G) or in drilled holes in the lagoon of the atoll (SHAFT/LG).

F-column

'F' indicates that a footnote is available. The footnote can be retrieved by the date and the ID number. A figure (sometimes without a preceding 'F') means that the event is a salvo explosion. The figure corresponds to the number of detonations, each having the same yield in the reported yield range.

Note: Unless otherwise noted in the footnotes, all tests at the Nevada Test Site or at the Nellis Air Force Range before 15 September 1961 produced radioactivity detected off-site. (All these tests were atmospheric.) Unless otherwise noted in footnotes, no test at these test sites on or after that date—all underground—released radioactivity that was detected off-site. The other established nuclear weapon states have not published information on releases of radioactivity. (See note in section 3.1 above.)

3.3. SOURCES

- BKY: Berkeley Seismological Laboratory, Berkeley, CA, USA.
- DIS: Dahlman, O. and Israelson, H., National Defense Research Institute (FOA), Stockholm, *Monitoring Underground Nuclear Explosions* (Elsevier: Amsterdam, 1977).
- DOE: US Department of Energy (DOE), various news bulletins and *United States Nuclear Tests: July 1945 through September 1992*, DOE/NV-209 (Rev. 14) (DOE: Washington, DC, 1994).
- HFS: Hagfors Observatory, Sweden, operated by the *Defence Research Establishment* (FOA). Various reports.
- IDC: Prototype International Data Center, Washington, DC (Arlington, Va.), *Nuclear Explosion Data Base*.
- ISC: Bulletin of the International Seismological Centre, (Thatcham, UK).
- MTM: Ministry of the Russian Federation for Atomic Energy and Ministry of Defense of the Russian Federation, *USSR Nuclear Weapons Tests and Peaceful Nuclear Explosions, 1949 through 1990* (Russian Federal Nuclear Center—All-Russian Research Institute of Experimental Physics [VNIIEF]: Sarov, 1996).
- NOA: Norwegian Seismic Array, NORSAR, Kjeller, Norway. Various reports and information.
- NRD: Norris, R. S., Burrows, A. S. and Fieldhouse, R. W., 'British, French and Chinese nuclear weapons', *Nuclear Weapons Databook, Vol. V* (Natural Resources Defense Council [NRDC]: Washington, DC, 1994).
- SPA: Direction des centres d'experimentations nucléaires [DIRCEN] and Commissariat à l'Energie Atomique [CEA], *Assessment of French nuclear testing* (DIRCEN and CEA: Paris, 1998).
- UGS: US Geological Survey, National Earthquake Information Center, *Preliminary determination of epicenters*.
- WTN: Department of Scientific and Industrial Research, Geology and Geophysics Division, Wellington, New Zealand. Various reports and information..
- ZAR: Zander, I. and Araskog, R., *Nuclear explosions 1945-72*, FOA 4 Report, A 4505-A1 (FOA: Stockholm, 1973).

4. DATA ON NUCLEAR EXPLOSIONS, 1945–98

Date	Origin	T	ID no	Country	Region	Sou	Lat	Long	mb	Ms	Depth	Yield l	Yield u	Purpose	Name	Type	F
450716	123000.0		45001	USA	ALAMOGORDO	DOE	32.540	-105.570	0.0	0.0	-0.100	21.0	21.0	WR	TRINITY	TOWER	
450805	231500.0		45002	USA	HIROSHIMA	DOE	34.230	132.270	0.0	0.0	-0.600	15.0	15.0	COMBAT	LITTLEBOY	AIRDROP	
450809	158000.0		45003	USA	NAGASAKI	DOE	32.450	129.520	0.0	0.0	-0.600	21.0	21.0	COMBAT	FATMAN	AIRDROP	
460630	220100.0		46001	USA	BIKINI	DOE	11.350	165.200	0.0	0.0	-0.200	21.0	21.0	WE	ABLE	AIRDROP	
460724	213500.0		46002	USA	BIKINI	DOE	11.350	165.200	0.0	0.0	0.030	21.0	21.0	WE	BAKER	UW	
480414	181700.0		48001	USA	ENEWETAK	DOE	11.300	162.150	0.0	0.0	-0.080	37.0	37.0	WR	X-RAY	TOWER	
480430	180900.0		48002	USA	ENEWETAK	DOE	11.300	162.150	0.0	0.0	-0.080	49.0	49.0	WR	YOKE	TOWER	
480514	180400.0		48003	USA	ENEWETAK	DOE	11.300	162.150	0.0	0.0	-0.080	18.0	18.0	WR	ZEBRA	TOWER	
490829	12000.0		49001	USSR	SEMI KAZAKH	DOE	48.000	76.000	0.0	0.0	0.000	22.0	22.0	WR		SURFACE	
510127	134500.0		51001	USA	NTS	DOE	37.000	-116.000	0.0	0.0	-0.350	1.0	1.0	WR	ABLE	AIRDROP	
510128	135200.0		51002	USA	NTS	DOE	37.000	-116.000	0.0	0.0	-0.350	8.0	8.0	WR	BAKER	AIRDROP	
510201	134700.0		51003	USA	NTS	DOE	37.000	-116.000	0.0	0.0	-0.350	1.0	1.0	WR	EASY	AIRDROP	
510202	134900.0		51004	USA	NTS	DOE	37.000	-116.000	0.0	0.0	-0.400	8.0	8.0	WR	BAKER2	AIRDROP	
510206	134700.0		51005	USA	NTS	DOE	37.000	-116.000	0.0	0.0	-0.500	22.0	22.0	WR	FOX	AIRDROP	
510407	183400.0		51006	USA	ENEWETAK	DOE	11.300	162.150	0.0	0.0	-0.100	81.0	81.0	WR	DOG	TOWER	
510420	182700.0		51007	USA	ENEWETAK	DOE	11.300	162.150	0.0	0.0	-0.100	47.0	47.0	WR	EASY	TOWER	
510508	213000.0		51008	USA	ENEWETAK	DOE	11.300	162.150	0.0	0.0	-0.070	225.0	225.0	WR	GEORGE	TOWER	F
510524	181700.0		51009	USA	ENEWETAK	DOE	11.300	162.150	0.0	0.0	-0.070	45.5	45.5	WR	ITEM	TOWER	
510924	0.0		51010	USSR	SEMI KAZAKH	DOE	48.000	76.000	0.0	0.0	0.000	38.0	38.0	WR		SURFACE	
511018	0.0		51011	USSR	SEMI KAZAKH	DOE	48.000	76.000	0.0	0.0	0.000	42.0	42.0	WR		AIRDROP	
511022	140000.0		51012	USA	NTS	DOE	37.000	-116.000	0.0	0.0	-0.030	0.0	0.1	WR	ABLE	TOWER	
511028	152000.0		51013	USA	NTS	DOE	37.000	-116.000	0.0	0.0	-0.400	3.5	3.5	WR	BAKER	AIRDROP	
511030	150000.0		51014	USA	NTS	DOE	37.000	-116.000	0.0	0.0	-0.400	14.0	14.0	WR	CHARLIE	AIRDROP	
511101	153000.0		51015	USA	NTS	DOE	37.000	-116.000	0.0	0.0	-0.500	21.0	21.0	WR	DOG	AIRDROP	
511105	163000.0		51016	USA	NTS	DOE	37.000	-116.000	0.0	0.0	-0.450	31.0	31.0	WR	EASY	AIRDROP	
511119	170000.0		51017	USA	NTS	DOE	37.000	-116.000	0.0	0.0	-0.001	1.2	1.2	WE	SUGAR	SURFACE	
511129	200000.0		51018	USA	NTS	DOE	37.000	-116.000	0.0	0.0	0.010	1.2	1.2	WE	UNCLE	CRATER	
520401	170000.0		52001	USA	NTS	DOE	37.000	-116.000	0.0	0.0	-0.250	1.0	1.0	WE	ABLE	AIRDROP	
520415	173000.0		52002	USA	NTS	DOE	37.000	-116.000	0.0	0.0	-0.350	1.0	1.0	WE	BAKER	AIRDROP	
520422	173000.0		52003	USA	NTS	DOE	37.000	-116.000	0.0	0.0	-1.150	31.0	31.0	WR	CHARLIE	AIRDROP	
520501	163000.0		52004	USA	NTS	DOE	37.000	-116.000	0.0	0.0	-0.350	19.0	19.0	WR	DOG	AIRDROP	
520507	121500.0		52005	USA	NTS	DOE	37.000	-116.000	0.0	0.0	-0.100	12.0	12.0	WR	EASY	TOWER	
520525	120000.0		52006	USA	NTS	DOE	37.000	-116.000	0.0	0.0	-0.100	11.0	11.0	WR	FOX	TOWER	
520601	115500.0		52007	USA	NTS	DOE	37.000	-116.000	0.0	0.0	-0.100	15.0	15.0	WR	GEORGE	TOWER	
520605	115500.0		52008	USA	NTS	DOE	37.000	-116.000	0.0	0.0	-0.100	14.0	14.0	WR	HOW	TOWER	
521003	80000.0		52009	UK	MONTEB AUSTR	DOE	-20.400	115.570	0.0	0.0	-0.001	25.0	25.0	WE	HURRICANE	SHIP	
521031	191500.0		52010	USA	ENEWETAK	DOE	11.300	162.150	0.0	0.0	-0.001	10400.0	10400.0	WR	MIKE	SURFACE	
521115	0.0		52011	USA	ENEWETAK	DOE	11.300	162.150	0.0	0.0	-0.500	500.0	500.0	WR	KING	AIRDROP	
530317	132000.0		53001	USA	NTS	DOE	37.000	-116.000	0.0	0.0	-0.100	16.0	16.0	WR	ANNIE	TOWER	
530324	131000.0		53002	USA	NTS	DOE	37.000	-116.000	0.0	0.0	-0.100	24.0	24.0	WR	NANCY	TOWER	
530331	130000.0		53003	USA	NTS	DOE	37.000	-116.000	0.0	0.0	-0.100	0.2	0.2	WR	RUTH	TOWER	
530406	153000.0		53004	USA	NTS	DOE	37.000	-116.000	0.0	0.0	-2.000	11.0	11.0	WR	DIXIE	AIRDROP	
530411	124500.0		53005	USA	NTS	DOE	37.000	-116.000	0.0	0.0	-0.030	0.2	0.2	WR	RAY	TOWER	
530418	123500.0		53006	USA	NTS	DOE	37.000	-116.000	0.0	0.0	-0.100	23.0	23.0	WR	BADGER	TOWER	
530425	123000.0		53007	USA	NTS	DOE	37.000	-116.000	0.0	0.0	-0.100	43.0	43.0	WR	SIMON	TOWER	
530508	153000.0		53008	USA	NTS	DOE	37.000	-116.000	0.0	0.0	-0.800	27.0	27.0	WE	ENCORE	AIRDROP	
530519	120500.0		53009	USA	NTS	DOE	37.000	-116.000	0.0	0.0	-0.100	32.0	32.0	WR	HARRY	TOWER	
530525	153000.0		53010	USA	NTS	DOE	37.000	-116.000	0.0	0.0	-0.200	15.0	15.0	WR	GRABLE	ATMOSP	
530604	111500.0		53011	USA	NTS	DOE	37.000	-116.000	0.0	0.0	-0.400	61.0	61.0	WR	CLIMAX	AIRDROP	
530812	0.0		53012	USSR	SEMI KAZAKH	DOE	50.000	78.000	0.0	0.0	0.000	400.0	400.0	WR		SURFACE	F
530823	0.0		53013	USSR	SEMI KAZAKH	DOE	50.000	78.000	0.0	0.0	0.000	28.0	28.0	WR		ATMOSP	
530903	0.0		53014	USSR	SEMI KAZAKH	MTM	50.000	78.000	0.0	0.0	0.000	5.8	5.8	WR		ATMOSP	
530908	0.0		53015	USSR	SEMI KAZAKH	MTM	50.000	78.000	0.0	0.0	0.000	1.6	1.6	WR		ATMOSP	
530910	0.0		53016	USSR	SEMI KAZAKH	MTM	50.000	78.000	0.0	0.0	0.000	4.9	4.9	WR		ATMOSP	
531014	223000.0		53017	UK	EMU AUSTR	DOE	-28.700	132.350	0.0	0.0	0.000	10.0	10.0	WR	TOTEM:1	TOWER	F
531026	223000.0		53018	UK	EMU AUSTR	DOE	-28.700	132.350	0.0	0.0	0.000	8.0	8.0	WR	TOTEM:2	TOWER	
540228	184500.0		54001	USA	BIKINI	DOE	11.350	165.200	0.0	0.0	-0.001	15000.0	15000.0	WR	BRAVO	SURFACE	
540326	183000.0		54002	USA	BIKINI	DOE	11.350	165.200	0.0	0.0	-0.001	11000.0	11000.0	WR	ROMEO	BARGE	
540406	182000.0		54003	USA	BIKINI	DOE	11.350	165.200	0.0	0.0	-0.001	110.0	110.0	WR	KOON	SURFACE	
540425	181000.0		54004	USA	BIKINI	DOE	11.350	165.200	0.0	0.0	-0.001	6900.0	6900.0	WR	UNION	BARGE	
540504	181000.0		54005	USA	BIKINI	DOE	11.350	165.200	0.0	0.0	-0.001	13500.0	13500.0	WR	YANKEE	BARGE	
540513	182000.0		54006	USA	ENEWETAK	DOE	11.300	162.150	0.0	0.0	-0.001	1690.0	1690.0	WR	NECTAR	BARGE	
540914	53600.0		54007	USSR	ORENBC RUSS	DOE	52.000	55.000	0.0	0.0	0.000	40.0	40.0	ME		ATMOSP	
540929	0.0		54008	USSR	SEMI KAZAKH	MTM	50.000	78.000	0.0	0.0	0.000	0.2	0.2	WR		ATMOSP	
541001	0.0		54009	USSR	SEMI KAZAKH	MTM	50.000	78.000	0.0	0.0	0.000	0.03	0.03	WR		ATMOSP	
541003	0.0		54010	USSR	SEMI KAZAKH	MTM	50.000	78.000	0.0	0.0	0.000	2.0	2.0	WR		ATMOSP	
541005	0.0		54011	USSR	SEMI KAZAKH	MTM	50.000	78.000	0.0	0.0	0.000	4.0	4.0	WR		ATMOSP	
541008	0.0		54012	USSR	SEMI KAZAKH	MTM	50.000	78.000	0.0	0.0	0.000	0.8	0.8	WR		SURFACE	
541019	0.0		54013	USSR	SEMI KAZAKH	MTM	50.000	78.000	0.0	0.0	0.000	0.0	0.001	WR		ATMOSP	
541023	0.0		54014	USSR	SEMI KAZAKH	MTM	50.000	78.000	0.0	0.0	0.000	62.0	62.0	WR		SURFACE	
541026	0.0		54015	USSR	SEMI KAZAKH	DOE	50.000	78.000	0.0	0.0	0.000	2.8	2.8	WR		ATMOSP	
541030	0.0		54016	USSR	SEMI KAZAKH	MTM	50.000	78.000	0.0	0.0	0.000	10.0	10.0	WR		SURFACE	
550218	200000.0		55001	USA	NTS	DOE	37.000	-116.000	0.0	0.0	-0.250	1.0	1.0	WE	WASP	AIRDROP	
550222	134500.0		55002	USA	NTS	DOE	37.000	-116.000	0.0	0.0	-0.100	2.0	2.0	WR	MOTH	TOWER	
550301	133000.0		55003	USA	NTS	DOE	37.000	-116.000	0.0	0.0	-0.100	7.0	7.0	WR	TESLA	TOWER	
550307	132000.0		55004	USA	NTS	DOE	37.000	-116.000	0.0	0.0	-0.200	43.0	43.0	WR	TURK	TOWER	
550312	132000.0		55005	USA	NTS	DOE	37.000	-116.000	0.0	0.0	-0.100	4.0	4.0	WR	HORNET	TOWER	
550322	130500.0		55006	USA	NTS	DOE	37.000	-116.000	0.0	0.0	-0.200	8.0	8.0	WR	BEE	TOWER	
550323	203000.0		55007	USA	NTS	DOE	37.000	-116.000	0.0	0.0	0.020	1.0	1.0	WE	ESS	CRATER	
550329	125500.0		55008	USA	NTS	DOE	37.000	-116.000	0.0	0.0	-0.200						

560721	181200.0	56023	USA	ENEWETAK	DOE	11.300	162.150	0.0	0.0	-0.001	250.0	250.0	WR	HURON	BARGE
560824	0.0	56024	USSR	SEMI KAZAKH	DOE	50.000	78.000	0.0	0.0	0.000	27.0	27.0	WR		SURFACE
560830	0.0	56025	USSR	SEMI KAZAKH	DOE	50.000	78.000	0.0	0.0	0.000	900.0	900.0	WR		ATMOSP
560902	0.0	56026	USSR	SEMI KAZAKH	DOE	50.000	78.000	0.0	0.0	0.000	51.0	51.0	WR		ATMOSP
560910	0.0	56027	USSR	SEMI KAZAKH	DOE	50.000	78.000	0.0	0.0	0.000	38.0	38.0	WR		ATMOSP
560927	73000.0	56028	UK	MARALI AUSTR	DOE	-30.000	131.000	0.0	0.0	0.000	15.0	15.0	WR	BUFFALO:R1	TOWER
561004	70000.0	56029	UK	MARALI AUSTR	DOE	-30.000	131.000	0.0	0.0	-0.001	1.5	1.5	WE	BUFFALO:R2	SURFACE
561011	55700.0	56030	UK	MARALI AUSTR	DOE	-30.000	131.000	0.0	0.0	0.000	3.0	3.0	WR	BUFFALO:R3	AIRDROP
561022	143500.0	56031	UK	MARALI AUSTR	DOE	-30.000	131.000	0.0	0.0	0.000	10.0	10.0	WR	BUFFALO:R4	TOWER
561117	0.0	56032	USSR	SEMI KAZAKH	DOE	50.000	78.000	0.0	0.0	0.000	900.0	900.0	WR		ATMOSP
561214	0.0	56033	USSR	SEMI KAZAKH	DOE	50.000	78.000	0.0	0.0	0.000	40.0	40.0	WR		ATMOSP
570119	0.0	57001	USSR	MTR RUSS	DOE	48.000	46.000	0.0	0.0	0.000	10.0	10.0	WE		ATMOSP
570308	0.0	57002	USSR	SEMI KAZAKH	DOE	50.000	78.000	0.0	0.0	0.000	19.0	19.0	WR		ATMOSP
570403	0.0	57003	USSR	SEMI KAZAKH	DOE	50.000	78.000	0.0	0.0	0.000	42.0	42.0	WR		ATMOSP
570406	0.0	57004	USSR	SEMI KAZAKH	DOE	50.000	78.000	0.0	0.0	0.000	57.0	57.0	WR		ATMOSP
570410	0.0	57005	USSR	SEMI KAZAKH	DOE	50.000	78.000	0.0	0.0	0.000	680.0	680.0	WR		ATMOSP
570412	0.0	57006	USSR	SEMI KAZAKH	DOE	50.000	78.000	0.0	0.0	0.000	22.0	22.0	WR		ATMOSP
570416	0.0	57007	USSR	SEMI KAZAKH	DOE	50.000	78.000	0.0	0.0	0.000	320.0	320.0	WR		ATMOSP
570424	0.0	57053	USA	NELLIS NV	DOE	37.000	-115.000	0.0	0.0	0.000	0.0	0.0	SE	PROJECT 57:1	SURFACE
570515	193700.0	57008	UK	MALDEN IS	DOE	-4.000	-155.000	0.0	0.0	0.000	300.0	300.0	WR	GRAPPLE:1	AIRDROP
570528	115500.0	57009	USA	NTS	DOE	37.000	-116.000	0.0	0.0	-0.200	12.0	12.0	WR	BOLTZMANN	TOWER
570531	0.0	57010	UK	MALDEN IS	DOE	-4.000	-155.000	0.0	0.0	0.000	720.0	720.0	WR	GRAPPLE:2	AIRDROP
570602	115500.0	57011	USA	NTS	DOE	37.000	-116.000	0.0	0.0	-0.100	0.14	0.14	WR	FRANKLIN	TOWER
570605	114500.0	57012	USA	NTS	DOE	37.000	-116.000	0.0	0.0	-0.200	0.0005	0.0005	WR	LASSEN	BALLOON
570618	114500.0	57013	USA	NTS	DOE	37.000	-116.000	0.0	0.0	-0.200	10.0	10.0	WR	WILSON	BALLOON
570619	194000.0	57014	UK	MALDEN IS	DOE	-4.000	-155.000	0.0	0.0	0.000	200.0	200.0	WR	GRAPPLE:3	AIRDROP
570624	133000.0	57015	USA	NTS	DOE	37.000	-116.000	0.0	0.0	-0.200	37.0	37.0	WR	PRISCILLA	BALLOON
570701	0.0	57054	USA	NTS	DOE	37.000	-116.000	0.0	0.0	0.000	0.0	0.0	SE	COULOMB-A	SURFACE
570705	114000.0	57016	USA	NTS	DOE	37.000	-116.000	0.0	0.0	-0.500	74.0	74.0	WR	HOOD	BALLOON
570715	113000.0	57017	USA	NTS	DOE	37.000	-116.000	0.0	0.0	-0.200	17.0	17.0	WR	DIABLO	TOWER
570719	140000.0	57018	USA	NTS	DOE	37.000	-116.000	0.0	0.0	-6.800	2.0	2.0	WE	JOHN	ROCKET
570724	115000.0	57019	USA	NTS	DOE	37.000	-116.000	0.0	0.0	-0.200	10.0	10.0	WR	KEPLER	TOWER
570725	133000.0	57020	USA	NTS	DOE	37.000	-116.000	0.0	0.0	-0.200	9.7	9.7	WR	OWENS	BALLOON
570726	80000.0	57021	USA	NTS	DOE	37.000	-116.000	0.0	0.0	0.000	0.0	0.0	SE	PASCAL-A	SHAFT
570807	122500.0	57022	USA	NTS	DOE	37.000	-116.000	0.0	0.0	-0.500	19.0	19.0	WR	STOKES	BALLOON
570810	10000.0	57025	USA	NTS	DOE	37.000	-116.000	0.0	0.0	0.000	0.0	0.0	SE	SATURN	TUNNEL
570818	120000.0	57023	USA	NTS	DOE	37.000	-116.000	0.0	0.0	-0.200	17.0	17.0	WR	SHASTA	TOWER
570822	0.0	57024	USSR	SEMI KAZAKH	DOE	50.000	78.000	0.0	0.0	0.000	520.0	520.0	WR		ATMOSP
570823	123000.0	57025	USA	NTS	DOE	37.000	-116.000	0.0	0.0	-0.500	11.0	11.0	WR	DOPPLER	BALLOON
570826	0.0	57026	USSR	SEMI KAZAKH	MTM	50.000	78.000	0.0	0.0	0.000	0.1	0.1	SE		ATMOSP
570827	223500.0	57027	USA	NTS	DOE	37.000	-116.000	0.0	0.0	0.000	0.0	0.0	SE	PASCAL-B	SHAFT
570830	124000.0	57028	USA	NTS	DOE	37.000	-116.000	0.0	0.0	-0.250	4.7	4.7	WR	FRANKLIN PRIME	TOWER
570831	123000.0	57029	USA	NTS	DOE	37.000	-116.000	0.0	0.0	-0.250	44.0	44.0	WR	SMOKY	TOWER
570902	124000.0	57030	USA	NTS	DOE	37.000	-116.000	0.0	0.0	-0.200	11.0	11.0	WR	GALLEO	TOWER
570906	124500.0	57031	USA	NTS	DOE	37.000	-116.000	0.0	0.0	-0.200	0.2	0.2	WR	WHEELER	BALLOON
570906	200500.0	57032	USA	NTS	DOE	37.000	-116.000	0.0	0.0	-0.001	0.3	0.3	SE	COULOMB-B	SURFACE
570907	0.0	57034	USSR	NZ RUSS	DOE	73.000	55.000	0.0	0.0	0.000	32.0	32.0	FMS		SURFACE
570908	130000.0	57033	USA	NTS	DOE	37.000	-116.000	0.0	0.0	-0.250	1.0	1.0	WR	LAPLACE	BALLOON
570913	0.0	57035	USSR	SEMI KAZAKH	MTM	50.000	78.000	0.0	0.0	0.000	5.9	5.9	WR		ATMOSP
570914	50500.0	57036	UK	MARALI AUSTR	DOE	-30.000	131.000	0.0	0.0	0.000	1.0	1.0	WR	ANTLER:1	TOWER
570914	164500.0	57037	USA	NTS	DOE	37.000	-116.000	0.0	0.0	-0.200	11.0	11.0	WR	FIZEAU	TOWER
570916	125000.0	57038	USA	NTS	DOE	37.000	-116.000	0.0	0.0	-0.500	12.0	12.0	WR	NEWTON	BALLOON
570919	170000.0	57039	USA	NTS	DOE	37.000	-116.000	4.1	0.0	0.300	1.7	1.7	WR	RAINIER	TUNNEL
570923	123000.0	57040	USA	NTS	DOE	37.000	-116.000	0.0	0.0	-0.200	19.0	19.0	WR	WHITNEY	TOWER
570924	90000.0	57041	USSR	NZ RUSS	DOE	73.000	55.000	0.0	0.0	0.000	1600.0	1600.0	WR		AIRDROP
570925	3000.0	57042	UK	MARALI AUSTR	DOE	-30.000	131.000	0.0	0.0	0.000	6.0	6.0	WR	ANTLER:2	TOWER
570926	50000.0	57043	USSR	SEMI KAZAKH	MTM	50.000	78.000	0.0	0.0	0.000	13.0	13.0	WR		ATMOSP
570928	130000.0	57044	USA	NTS	DOE	37.000	-116.000	0.0	0.0	-0.500	12.0	12.0	WR	CHARLESTON	BALLOON
571006	85800.0	57045	USSR	NZ RUSS	DOE	73.000	55.000	0.0	0.0	0.000	2900.0	2900.0	WR		ATMOSP
571007	130000.0	57046	USA	NTS	DOE	37.000	-116.000	0.0	0.0	-0.200	8.0	8.0	WR	MORGAN	BALLOON
571009	64500.0	57047	UK	MARALI AUSTR	DOE	-30.000	131.000	0.0	0.0	0.000	25.0	25.0	WR	ANTLER:3	BALLOON
571010	65500.0	57048	USSR	NZ RUSS	DOE	73.000	55.000	0.0	0.0	0.000	10.0	10.0	WE		UW
571108	174700.0	57049	UK	CHRISTMAS IS	DOE	2.000	-157.000	0.0	0.0	0.000	1800.0	1800.0	WR	GRAPPLE X	AIRDROP
571206	201500.0	57050	USA	NTS	DOE	37.000	-116.000	0.0	0.0	0.000	0.0	0.0	SE	PASCAL-C	SHAFT
571209	200000.0	57051	USA	NTS	DOE	37.000	-116.000	0.0	0.0	0.000	0.5	0.5	SE	COULOMB-C	SURFACE
571228	0.0	57052	USSR	SEMI KAZAKH	DOE	50.000	78.000	0.0	0.0	0.000	12.0	12.0	WR		ATMOSP
580104	0.0	58001	USSR	SEMI KAZAKH	MTM	50.000	78.000	0.0	0.0	0.000	1.3	1.3	WR		ATMOSP
580117	0.0	58002	USSR	SEMI KAZAKH	MTM	50.000	78.000	0.0	0.0	0.000	0.5	0.5	WR		ATMOSP
580222	0.0	58003	USA	NTS	DOE	37.000	-116.000	0.0	0.0	0.000	0.0	0.001	SE	VENUS	TUNNEL
580223	0.0	58004	USSR	NZ RUSS	DOE	73.000	55.000	0.0	0.0	0.000	860.0	860.0	WR		ATMOSP
580227	75900.0	58005	USSR	NZ RUSS	DOE	73.000	55.000	0.0	0.0	0.000	250.0	250.0	WR		ATMOSP
580227	102400.0	58006	USSR	NZ RUSS	DOE	73.000	55.000	0.0	0.0	0.000	1500.0	1500.0	WR		ATMOSP
580313	0.0	58007	USSR	SEMI KAZAKH	MTM	50.000	78.000	0.0	0.0	0.000	1.2	1.2	WR		ATMOSP
580314	0.0	58008	USSR	NZ RUSS	DOE	73.000	55.000	0.0	0.0	0.000	40.0	40.0	FMS		ATMOSP
580314	0.0	58009	USSR	SEMI KAZAKH	DOE	50.000	78.000	0.0	0.0	0.000	35.0	35.0	WR		ATMOSP
580314	220000.0	58010	USA	NTS	DOE	37.000	-116.000	0.0	0.0	0.000	0.0	0.001	SE	URANUS	TUNNEL
580315	0.0	58011	USSR	SEMI KAZAKH	DOE	50.000	78.000	0.0	0.0	0.000	14.0	14.0	WR		ATMOSP
580318	0.0	58012	USSR	SEMI KAZAKH	MTM	50.000	78.000	0.0	0.0	0.000	0.16	0.16	FMS		ATMOSP
580320	0.0	58013	USSR	SEMI KAZAKH	DOE	50.000	78.000	0.0	0.0	0.000	12.0	12.0	WR		ATMOSP
580321	0.0	58014	USSR	NZ RUSS	DOE	73.000	55.000	0.0	0.0	0.000	650.0	650.0	WR		ATMOSP
580322	0.0	58015	USSR	SEMI KAZAKH	DOE	50.000	78.000	0.0	0.0	0.000	18.0	18.0	WR		ATMOSP
580428	24000.0	58016	USA	PACIFIC	DOE	12.617	163.017	0.0	0.0	-28.000	1.7	1.7	WE	YUCCA	BALLOON
580428	190500.0	58017	UK	CHRISTMAS IS	DOE	2.000	-157.000	0.0	0.0	0.000	3000.0	3000.0	WR	GRAPPLE Y	AIRDROP
580505	181500.0	58018	USA	ENEWETAK	DOE	11.300	162.150	0.0	0.0	-0.001	18.0	18.0	WR	CACTUS	SURFACE
580511	175000.0	58019	USA	BKINI	DOE	11.350	165.200	0.0	0.0	-0.001	1360.0	1360.0	WR	FIR	BARGE

580902	172400.0	58055	UK	CHRISTMAS IS	DOE	2.000	-157.000	0.0	0.0	0.000	1000.0	1000.0	WR	GRAPPLE	AIRDROP
580906	221300.0	58056	USA	S. ATLANTIC	DOE	-48.500	-9.700	0.0	0.0	-160.000	1.0	2.0	WE	ARGUS:III	ROCKET
580911	174900.0	58057	UK	CHRISTMAS IS	DOE	2.000	-157.000	0.0	0.0	0.000	800.0	800.0	WR	GRAPPLE Z	AIRDROP
580912	200000.0	58058	USA	NTS	DOE	37.000	-116.000	0.0	0.0	0.000	0.038	0.038	SE	OTERO	SHAFT
580917	193000.0	58059	USA	NTS	DOE	37.000	-116.000	0.0	0.0	0.000	0.015	0.015	SE	BERNALILLO	SHAFT
580919	140000.0	58060	USA	NTS	DOE	37.000	-116.000	0.0	0.0	-0.200	0.083	0.083	WR	EDDY	BALLOON
580921	190000.0	58061	USA	NTS	DOE	37.000	-116.000	0.0	0.0	0.000	0.0015	0.0015	SE	LUNA	SHAFT
580923	180000.0	58062	UK	CHRISTMAS IS	DOE	2.000	-157.000	0.0	0.0	0.000	25.0	25.0	WR	GRAPPLE Z	BALLOON
580923	220000.0	58063	USA	NTS	DOE	37.000	-116.000	0.0	0.0	0.000	0.0	0.0	SE	MERCURY	TUNNEL
580926	200000.0	58064	USA	NTS	DOE	37.000	-116.000	0.0	0.0	0.000	0.002	0.002	SE	VALENCIA	SHAFT
580928	0.0	58065	USA	NTS	DOE	37.000	-116.000	0.0	0.0	0.000	0.013	0.013	SE	MARS	TUNNEL
580929	140500.0	58066	USA	NTS	DOE	37.000	-116.000	0.0	0.0	-0.500	2.0	2.0	WR	MORA	BALLOON
580930	75000.0	58067	USSR	NZ RUSS	DOE	73.000	55.000	0.0	0.0	0.000	1200.0	1200.0	WR	ATMOSPH	
580930	95500.0	58068	USSR	NZ RUSS	DOE	73.000	55.000	0.0	0.0	0.000	900.0	900.0	WR	ATMOSPH	
581002	80000.0	58069	USSR	NZ RUSS	DOE	73.000	55.000	0.0	0.0	0.000	290.0	290.0	WR	ATMOSPH	
581002	90100.0	58070	USSR	NZ RUSS	DOE	73.000	55.000	0.0	0.0	0.000	40.0	40.0	FMS	ATMOSPH	
581004	0.0	58071	USSR	NZ RUSS	MTM	73.000	55.000	0.0	0.0	0.000	9.0	9.0	WR	ATMOSPH	
581005	60000.0	58072	USSR	NZ RUSS	DOE	73.000	55.000	0.0	0.0	0.000	15.0	15.0	WR	ATMOSPH	
581005	141000.0	58073	USA	NTS	DOE	37.000	-116.000	0.0	0.0	0.000	0.077	0.077	SE	HIDALGO	BALLOON
581005	161500.0	58074	USA	NTS	DOE	37.000	-116.000	0.0	0.0	0.000	0.0055	0.0055	SE	COLFAX	SHAFT
581006	0.0	58075	USSR	NZ RUSS	MTM	73.000	55.000	0.0	0.0	0.000	5.5	5.5	WR	ATMOSPH	
581008	220000.0	58076	USA	NTS	DOE	37.000	-116.000	2.6	0.0	0.100	0.072	0.072	WR	TAMALPAIS	TUNNEL
581010	75100.0	58077	USSR	NZ RUSS	DOE	73.000	55.000	0.0	0.0	0.000	68.0	68.0	WR	ATMOSPH	
581010	143000.0	58078	USA	NTS	DOE	37.000	-116.000	0.0	0.0	-0.030	0.079	0.079	WR	QUAY	TOWER
581012	75300.0	58079	USSR	NZ RUSS	DOE	73.000	55.000	0.0	0.0	0.000	1450.0	1450.0	WR	ATMOSPH	
581013	132000.0	58080	USA	NTS	DOE	37.000	-116.000	0.0	0.0	-0.500	1.4	1.4	WR	LEA	BALLOON
581014	180000.0	58081	USA	NTS	DOE	37.000	-116.000	0.0	0.0	0.000	0.115	0.115	SE	NEPTUNE	TUNNEL
581015	75100.0	58082	USSR	NZ RUSS	DOE	73.000	55.000	0.0	0.0	0.000	1500.0	1500.0	WR	ATMOSPH	
581015	160000.0	58083	USA	NTS	DOE	37.000	-116.000	0.0	0.0	-0.002	0.0012	0.0012	WR	HAMILTON	TOWER
581016	60000.0	58084	USA	NTS	DOE	37.000	-116.000	4.4	0.0	0.300	5.0	5.0	WR	LOGAN	TUNNEL
581016	142000.0	58085	USA	NTS	DOE	37.000	-116.000	0.0	0.0	-0.150	0.037	0.037	WR	DONA ANA	BALLOON
581017	230000.0	58086	USA	NTS	DOE	37.000	-116.000	0.0	0.0	-0.001	0.024	0.024	SE	VESTA	SURFACE
581018	95100.0	58087	USSR	NZ RUSS	DOE	73.000	55.000	0.0	0.0	0.000	2900.0	2900.0	WR	ATMOSPH	
581018	142500.0	58088	USA	NTS	DOE	37.000	-116.000	0.0	0.0	-0.025	0.090	0.090	WR	RIO ARRIBA	TOWER
581019	72700.0	58089	USSR	NZ RUSS	DOE	73.000	55.000	0.0	0.0	0.000	40.0	40.0	FMS	ATMOSPH	
581019	0.0	58090	USSR	NZ RUSS	MTM	73.000	55.000	0.0	0.0	0.000	0.0	0.001	WR	ATMOSPH	
581020	82000.0	58091	USSR	NZ RUSS	DOE	73.000	55.000	0.0	0.0	0.000	440.0	440.0	WR	ATMOSPH	
581020	143000.0	58113	USA	NTS	DOE	37.000	-116.000	0.0	0.0	0.000	0.0	0.0	SE	SAN JUAN	SHAFT
581021	0.0	58092	USSR	NZ RUSS	MTM	73.000	55.000	0.0	0.0	0.000	2.0	2.0	WR	ATMOSPH	
581022	82100.0	58093	USSR	NZ RUSS	DOE	73.000	55.000	0.0	0.0	0.000	2800.0	2800.0	WR	ATMOSPH	
581022	133000.0	58094	USA	NTS	DOE	37.000	-116.000	0.0	0.0	-0.500	6.0	6.0	WR	SOCORRO	BALLOON
581022	165000.0	58095	USA	NTS	DOE	37.000	-116.000	0.0	0.0	-0.500	0.115	0.115	WR	WRANGELL	BALLOON
581022	234000.0	58096	USA	NTS	DOE	37.000	-116.000	0.0	0.0	-0.020	0.188	0.188	WR	RUSHMORE	BALLOON
581022	203000.0	58114	USA	NTS	DOE	37.000	-116.000	0.0	0.0	0.000	0.0	0.0	SE	OBBERON	TOWER
581024	80300.0	58097	USSR	NZ RUSS	DOE	73.000	55.000	0.0	0.0	0.000	1000.0	1000.0	WR	ATMOSPH	
581024	150000.0	58098	USA	NTS	DOE	37.000	-116.000	0.0	0.0	0.000	0.021	0.021	SE	CATRON	TOWER
581024	160100.0	58099	USA	NTS	DOE	37.000	-116.000	0.0	0.0	0.000	0.0017	0.0017	SE	JUNO	SURFACE
581025	82000.0	58100	USSR	NZ RUSS	DOE	73.000	55.000	0.0	0.0	0.000	190.0	190.0	WR	ATMOSPH	
581025	0.0	58101	USSR	NZ RUSS	MTM	73.000	55.000	0.0	0.0	0.000	0.0	0.1	FMS	ATMOSPH	
581026	40000.0	58102	USA	NTS	DOE	37.000	-116.000	0.0	0.0	0.000	0.0007	0.0007	SE	CERES	TOWER
581026	102000.0	58103	USA	NTS	DOE	37.000	-116.000	0.0	0.0	-0.500	4.9	4.9	WR	SANFORD	BALLOON
581026	160000.0	58104	USA	NTS	DOE	37.000	-116.000	0.0	0.0	-0.500	2.2	2.2	WR	DEBACA	BALLOON
581027	143000.0	58105	USA	NTS	DOE	37.000	-116.000	0.0	0.0	0.000	0.0006	0.0006	SE	CHAVEZ	TOWER
581029	0.2	58106	USA	NTS	DOE	37.000	-116.000	0.0	0.0	0.300	0.055	0.055	WR	EVANS	TUNNEL
581029	144500.0	58107	USA	NTS	DOE	37.000	-116.000	0.0	0.0	-0.010	0.0078	0.0078	WR	HUMBOLDT	TOWER
581029	112000.0	58115	USA	NTS	DOE	37.000	-116.000	0.0	0.0	0.000	0.0	0.0	WR	MAZAMA	TOWER
581030	30000.0	58108	USA	NTS	DOE	37.000	-116.000	4.8	0.0	-0.500	1.3	1.3	WR	SANTA FE	BALLOON
581030	150000.0	58109	USA	NTS	DOE	37.000	-116.000	0.0	0.0	0.300	22.0	22.0	WR	BLANCA	TUNNEL
581030	203400.0	58110	USA	NTS	DOE	37.000	-116.000	0.0	0.0	0.000	0.0002	0.0002	SE	TITANIA	TOWER
581030	110000.0	58116	USA	NTS	DOE	37.000	-116.000	0.0	0.0	0.000	0.0	0.0	SE	GANYMEDE	SURFACE
581101	0.0	58111	USSR	MTR RUSS	DOE	48.000	46.000	0.0	0.0	0.000	10.0	10.0	WE	ATMOSPH	
581103	0.0	58112	USSR	MTR RUSS	DOE	48.000	46.000	0.0	0.0	0.000	10.0	10.0	WE	ATMOSPH	
600213	70400.0	60001	FRANCE	REGGANE ALG	DOE	26.190	-0.040	0.0	0.0	-0.100	0.0	200.0	WE	GERBOISE BLEUE	TOWER
600401	61700.0	60002	FRANCE	REGGANE ALG	DOE	26.000	-0.090	0.0	0.0	-0.001	0.0	20.0	WR	GERBOISEBLANCHE	SURFACE
601227	72800.0	60003	FRANCE	REGGANE ALG	DOE	26.000	-0.100	0.0	0.0	0.000	0.0	20.0	WE	GERBOISE ROUGE	TOWER
610425	60800.0	61001	FRANCE	REGGANE ALG	DOE	26.000	-0.100	0.0	0.0	0.000	0.0	20.0	WR	GERBOISE VERTE	TOWER
610901	0.0	61002	USSR	SEMI KAZAKH	DOE	50.000	78.000	0.0	0.0	0.000	16.0	16.0	WR	ATMOSPH	
610904	0.0	61003	USSR	SEMI KAZAKH	DOE	50.000	78.000	0.0	0.0	0.000	9.0	9.0	WR	ATMOSPH	
610905	0.0	61004	USSR	SEMI KAZAKH	DOE	50.000	78.000	0.0	0.0	0.000	16.0	16.0	WR	ATMOSPH	
610906	0.0	61005	USSR	MTR RUSS	DOE	48.450	44.300	0.0	0.0	0.000	11.0	11.0	WE	ATMOSPH	
610906	0.0	61006	USSR	SEMI KAZAKH	MTM	50.000	78.000	0.0	0.0	0.000	1.1	1.1	WR	ATMOSPH	
610909	0.0	61007	USSR	SEMI KAZAKH	MTM	50.000	78.000	0.0	0.0	0.000	0.38	0.38	SAM	SURFACE	
610910	90009.0	61008	USSR	NZ RUSS	UGS	74.200	52.500	0.0	0.0	0.000	2700.0	2700.0	WR	ATMOSPH	
610910	0.0	61009	USSR	NZ RUSS	DOE	73.000	55.000	0.0	0.0	0.000	12.0	12.0	WR	ATMOSPH	
610910	0.0	61010	USSR	SEMI KAZAKH	MTM	50.000	78.000	0.0	0.0	0.000	0.88	0.88	WR	ATMOSPH	
610911	0.0	61011	USSR	SEMI KAZAKH	MTM	50.000	78.000	0.0	0.0	0.000	0.30	0.30	WR	ATMOSPH	
610912	100815.3	61012	USSR	NZ RUSS	UGS	74.200	52.100	0.0	0.0	0.000	1150.0	1150.0	WR	ATMOSPH	
610913	0.0	61013	USSR	NZ RUSS	DOE	73.000	55.000	0.0	0.0	0.000	6.0	6.0	WR	ATMOSPH	
610913	0.0	61014	USSR	SEMI KAZAKH	DOE	50.000	78.000	0.0	0.0	0.000	0.001	20.0	WR	ATMOSPH	
610914	0.0	61015	USSR	SEMI KAZAKH	MTM	50.000	78.000	0.0	0.0	0.000	0.4	0.4	WR	SURFACE	
610914	95616.7	61016	USSR	NZ RUSS	UGS	74.600	51.100	0.0	0.0	0.000	1200.0	1200.0	WR	ATMOSPH	
610915	170000.0	61017	USA	NTS	DOE	37.000	-116.000	4.4	0.0	0.450	2.6	2.6	WR	ANTLER	TUNNEL
610916	90813.7	61018	USSR	NZ RUSS	UGS	74.000	51.900	0.0	0.0	0.000	830.0	830.0	WR	ATMOSPH	
610916	194500.0	61019	USA	NTS	DOE	37.000	-116.000	2.5	0.0	0.100	0.0	20.0	WR	SHREW	SHAFT
610917	0.0	61020	USSR	SEMI KAZAKH	DOE	50.000	7								

611101	0.0	61056	USSR	SEMI KAZAKH	MTM	50.000	78.000	0.0	0.0	0.000	2.7	2.7	WR	ATMOSPH	
611102	84100.0	61057	USSR	NZ RUSS	DOE	73.000	55.000	0.0	0.0	0.000	120.0	120.0	WR	ATMOSPH	
611102	0.0	61058	USSR	NZ RUSS	DOE	73.000	55.000	0.0	0.0	0.000	280.0	280.0	WR	ATMOSPH	
611102	0.0	61059	USSR	SEMI KAZAKH	MTM	50.000	78.000	0.0	0.0	0.000	0.6	0.6	WR	ATMOSPH	
611103	0.0	61060	USSR	SEMI KAZAKH	MTM	50.000	78.000	0.0	0.0	0.000	0.0	0.001	SAM	SURFACE	
611103	0.0	61061	USSR	SEMI KAZAKH	MTM	50.000	78.000	0.0	0.0	0.000	0.9	0.9	WR	ATMOSPH	
611104	0.0	61062	USSR	NZ RUSS	MTM	73.000	55.000	0.0	0.0	0.000	15.0	15.0	WR	ATMOSPH	
611104	72019.7	61063	USSR	NZ RUSS	UGS	73.700	55.700	0.0	0.0	0.000	150.0	1500.0	WR	ATMOSPH	
611104	0.0	61064	USSR	NZ RUSS	MTM	73.000	55.000	0.0	0.0	0.000	6.0	6.0	WR	ATMOSPH	
611104	0.0	61065	USSR	SEMI KAZAKH	MTM	50.000	78.000	0.0	0.0	0.000	0.2	0.2	WR	SURFACE	
611107	113000.0	61066	FRANCE	IN ECKER ALG	DOE	24.000	5.000	0.0	0.0	0.000	0.0	20.0	WR	AGATHE	F
611203	230500.0	61067	USA	NTS	DOE	37.000	-116.000	4.3	0.0	0.000	13.4	13.4	WR	FISHER	SHAFT
611210	190000.0	61068	USA	CARLSBAD NM	DOE	32.250	-104.140	4.6	0.0	0.000	3.0	3.0	PNE: PLO	GNOME	F
611213	180000.0	61069	USA	NTS	DOE	37.000	-116.000	3.4	0.0	0.200	0.5	0.5	WR	MAD	SHAFT
611217	163500.0	61070	USA	NTS	DOE	37.000	-116.000	0.0	0.0	0.000	0.0	20.0	WR	RINGTAIL	SHAFT
611222	163000.0	61071	USA	NTS	DOE	37.000	-116.000	3.5	0.0	0.250	0.15	0.15	WR	FEATHER	TUNNEL
620109	163001.3	62001	USA	NTS	UGS	37.000	-116.200	0.0	0.0	0.000	5.1	5.1	WR	SHOAT	SHAFT
620118	180000.4	62002	USA	NTS	UGS	36.700	-116.100	0.0	0.0	0.000	6.4	6.4	WR	AGOUTI	SHAFT
620130	180000.0	62003	USA	NTS	DOE	37.000	-116.000	0.0	0.0	0.000	0.0	20.0	WR	DORMOUSE	SHAFT
620202	75957.8	62004	USSR	SEMI KAZAKH	UGS	49.700	78.100	0.0	0.0	0.000	0.001	20.0	WE	TUNNEL	
620208	180000.0	62005	USA	NTS	DOE	37.000	-116.000	4.3	0.0	0.200	3.07	3.07	WR	STILLWATER	SHAFT
620209	163000.0	62006	USA	NTS	DOE	37.000	-116.000	0.0	0.0	0.250	7.1	7.1	WR	ARMADILLO	SHAFT
620215	180000.0	62007	USA	NTS	DOE	37.000	-116.000	4.9	0.0	0.300	5.7	5.7	WE	HARDHAT	SHAFT
620219	163000.0	62008	USA	NTS	DOE	37.000	-116.000	3.9	0.0	0.150	1.9	1.9	WR	CHINCHILLA	SHAFT
620219	175000.0	62009	USA	NTS	DOE	37.000	-116.000	0.0	0.0	0.000	0.0	20.0	WR	CODSAW	SHAFT
620223	180000.0	62010	USA	NTS	DOE	37.000	-116.000	0.0	0.0	0.000	11.9	11.9	WR	CIMARRON	SHAFT
620224	163000.0	62011	USA	NTS	DOE	37.000	-116.000	0.0	0.0	0.000	0.0	20.0	WR	PLATYPUS	SHAFT
620301	191000.0	62012	UK	NTS	DOE	37.000	-116.000	0.0	0.0	0.000	9.5	9.5	WR	PAMPAS	SHAFT
620305	181500.0	62013	USA	NTS	DOE	37.000	-116.000	4.3	0.0	0.030	0.43	0.43	WE	DANNY BOY	CRATER
620306	163000.0	62014	USA	NTS	DOE	37.000	-116.000	0.0	0.0	0.000	0.0	20.0	SE	ERMINE	SHAFT
620308	180000.0	62015	USA	NTS	DOE	37.000	-116.000	0.0	0.0	0.000	8.4	8.4	WR	BRAZOS	SHAFT
620315	163000.0	62016	USA	NTS	DOE	37.000	-116.000	0.0	0.0	0.000	0.0	20.0	WR	HOGNOSE	SHAFT
620328	180000.0	62017	USA	NTS	DOE	37.000	-116.000	0.0	0.0	0.000	3.4	3.4	WR	HOOSIC	SHAFT
620331	180000.0	62018	USA	NTS	DOE	37.000	-116.000	4.3	0.0	0.150	0.0	20.0	WR	CHINCHILLA: II	SHAFT
620405	180000.0	62019	USA	NTS	DOE	37.000	-116.000	0.0	0.0	0.000	10.6	10.6	WR	DORMOUSE PRIME	SHAFT
620406	180000.0	62020	USA	NTS	DOE	37.000	-116.000	0.0	0.0	0.000	0.0	20.0	WR	PASSAIC	SHAFT
620412	180000.0	62021	USA	NTS	DOE	37.000	-116.000	0.0	0.0	0.000	0.0	20.0	WR	HUDSON	SHAFT
620414	180000.0	62022	USA	NTS	DOE	37.000	-116.000	4.6	0.0	0.200	1.85	1.85	WR	PLATTE	TUNNEL
620421	184000.0	62023	USA	NTS	DOE	37.000	-116.000	0.0	0.0	0.000	0.0	20.0	WR	DEAD	SHAFT
620425	154500.0	62024	USA	CHRISTMAS IS	DOE	2.000	-157.000	0.0	0.0	0.000	190.0	190.0	WR	ADOBE	AIRDROP
620427	160100.0	62025	USA	CHRISTMAS IS	DOE	2.000	-157.000	0.0	0.0	0.000	410.0	410.0	WR	AZTEC	AIRDROP
620427	180000.0	62026	USA	NTS	DOE	37.000	-116.000	0.0	0.0	0.000	0.0	20.0	WR	BLACK	SHAFT
620501	95957.1	62027	FRANCE	IN ECKER ALG	UGS	23.800	5.400	0.0	0.0	0.000	20.0	150.0	WR	BERYL	GALLERY
620502	180200.0	62028	USA	CHRISTMAS IS	DOE	2.000	-157.000	0.0	0.0	0.000	1090.0	1090.0	WR	ARKANSAS	AIRDROP
620504	190500.0	62029	USA	CHRISTMAS IS	DOE	2.000	-157.000	0.0	0.0	0.000	670.0	670.0	WR	QUESTA	AIRDROP
620506	233000.0	62030	USA	PACIFIC	DOE	4.833	-149.417	0.0	0.0	0.000	0.0	0.0	WR	FRIGATE BIRD	ROCKET
620507	193300.1	62031	USA	NTS	UGS	37.046	-116.025	0.0	0.0	0.000	0.0	20.0	WR	PACA	SHAFT
620508	180100.0	62032	USA	CHRISTMAS IS	DOE	2.000	-157.000	0.0	0.0	0.000	100.0	100.0	WR	YUKON	AIRDROP
620509	170100.0	62033	USA	CHRISTMAS IS	DOE	2.000	-157.000	0.0	0.0	0.000	100.0	100.0	WR	MESILLA	AIRDROP
620510	150000.0	62034	USA	NTS	DOE	37.000	-116.000	0.0	0.0	0.000	0.0	20.0	WR	ARIKAREE	SHAFT
620511	153700.0	62035	USA	CHRISTMAS IS	DOE	2.000	-157.000	0.0	0.0	0.000	50.0	50.0	WR	MUSKEGON	AIRDROP
620511	200200.0	62036	USA	PACIFIC	DOE	31.233	-124.217	0.0	0.0	0.000	0.0	20.0	WE	SWORDFISH	UW
620512	170200.0	62037	USA	CHRISTMAS IS	DOE	2.000	-157.000	0.0	0.0	0.000	500.0	500.0	WR	ENCINO	AIRDROP
620512	190000.1	62038	USA	NTS	UGS	37.065	-116.030	0.0	0.0	0.000	40.0	40.0	WR	AARDVARK	SHAFT
620514	152200.0	62039	USA	CHRISTMAS IS	DOE	2.000	-157.000	0.0	0.0	0.000	97.0	97.0	WR	SWANEY	AIRDROP
620519	150000.2	62040	USA	NTS	UGS	37.122	-116.047	0.0	0.0	0.000	4.5	4.5	WR	EEL	SHAFT
620519	153600.0	62041	USA	CHRISTMAS IS	DOE	2.000	-157.000	0.0	0.0	0.000	73.0	73.0	WR	CHETCO	AIRDROP
620525	150000.2	62042	USA	NTS	UGS	37.125	-116.052	0.0	0.0	0.000	0.0	20.0	WR	WHITE	SHAFT
620525	160900.0	62043	USA	CHRISTMAS IS	DOE	2.000	-157.000	0.0	0.0	0.000	2.6	2.6	WR	TANAMA	AIRDROP
620527	170200.0	62044	USA	CHRISTMAS IS	DOE	2.000	-157.000	0.0	0.0	0.000	43.0	43.0	WR	NAMBE	AIRDROP
620601	170000.0	62045	USA	NTS	DOE	37.000	-116.000	0.0	0.0	0.000	0.0	20.0	WR	RACCOON	SHAFT
620606	170000.0	62046	USA	NTS	DOE	37.000	-116.000	4.4	0.0	0.300	0.0	20.0	WR	PKCRACK	SHAFT
620608	170300.0	62047	USA	CHRISTMAS IS	DOE	2.000	-157.000	0.0	0.0	0.000	782.0	782.0	WR	ALMA	AIRDROP
620609	153700.0	62048	USA	CHRISTMAS IS	DOE	2.000	-157.000	0.0	0.0	0.000	210.0	210.0	WR	TRUCKEE	AIRDROP
620610	160100.0	62049	USA	CHRISTMAS IS	DOE	2.000	-157.000	0.0	0.0	0.000	3000.0	3000.0	WR	YESO	AIRDROP
620612	153700.0	62050	USA	CHRISTMAS IS	DOE	2.000	-157.000	0.0	0.0	0.000	1200.0	1200.0	WR	HARLEM	AIRDROP
620613	210000.0	62051	USA	NTS	DOE	37.000	-116.000	0.0	0.0	0.000	2.9	2.9	WR	DES MOTNES	TUNNEL
620615	160100.0	62052	USA	CHRISTMAS IS	DOE	2.000	-157.000	0.0	0.0	0.000	800.0	800.0	WR	RINCONADA	AIRDROP
620617	160000.0	62053	USA	CHRISTMAS IS	DOE	2.000	-157.000	0.0	0.0	0.000	52.0	52.0	WR	DULCE	AIRDROP
620619	150100.0	62054	USA	CHRISTMAS IS	DOE	2.000	-157.000	0.0	0.0	0.000	2.2	2.2	WR	PETTIT	AIRDROP
620621	170000.0	62055	USA	NTS	DOE	37.000	-116.000	0.0	0.0	0.000	0.0	20.0	WR	DAMAN: I	SHAFT
620622	160000.0	62056	USA	CHRISTMAS IS	DOE	2.000	-157.000	0.0	0.0	0.000	81.5	81.5	WR	OTOWI	AIRDROP
620627	151900.0	62057	USA	CHRISTMAS IS	DOE	2.000	-157.000	0.0	0.0	0.000	7650.0	7650.0	WR	BIGHORN	AIRDROP
620627	180000.0	62058	USA	NTS	DOE	37.000	-116.000	4.9	0.0	0.450	67.0	67.0	WR	HAYMAKER	SHAFT
620628	170000.0	62059	USA	NTS	DOE	37.000	-116.000	0.0	0.0	0.000	0.0	20.0	WE	MARSHMALLOW	TUNNEL
620630	152100.0	62060	USA	CHRISTMAS IS	DOE	2.000	-157.000	0.0	0.0	0.000	1270.0	1270.0	WR	BLUESTONE	AIRDROP
620630	213000.0	62061	USA	NTS	DOE	37.000	-116.000	4.1	0.0	0.150	0.0	20.0	WR	SACRAMENTO	SHAFT
620706	170000.1	62062	USA	NTS	UGS	37.177	-116.045	0.0	0.0	0.000	104.0	104.0	PNE: PLO	SEDAN	CRATER
620707	190000.0	62063	USA	NTS	DOE	37.000	-116.000	0.0	0.0	0.000	0.0	20.0	WE	LITTLEFELLER: II	SURFACE
620709	90000.0	62064	USA	JOHNSTON IS	DOE	16.450	-169.320	0.0	0.0	-400.000	1400.0	1400.0	WE	STARFISH PRIME	ROCKET
620710	163300.0	62065	USA	CHRISTMAS IS	DOE	2.000	-157.000	0.0	0.0	0.000	1000.0	1000.0	WR	SUNSET	AIRDROP
620711	153700.0	62066	USA	CHRISTMAS IS	DOE	2.000	-157.000	0.0	0.0	0.000	3880.0	3880.0	WR	PAMLICO	AIRDROP
620711	164500.0	62067	USA	NTS	DOE	37.000	-116.000	0.0	0.0	0.000	0.5	0.5	WE	JOHNNIE BOY	CRATER
620713	160000.2	62068	USA	NTS	UGS	37.055	-116.033	0.0	0.0	0.000	20.0	200.0	WR	MERRIMAC	SHAFT
620714	18300														

631122	173000.2	63040	USA	NTS	UGS	37.100	-116.000	0.0	0.0	0.000	20.0	200.0	WR	GREYS	SHAFT	
631204	163828.8	63041	USA	NTS	UGS	36.900	-116.300	0.0	0.0	0.000	0.0	20.0	WR	SARDINE/BARRACU	SHAFT	F2x
631212	160200.9	63042	USA	NTS	UGS	37.100	-115.900	0.0	0.0	0.000	5.3	5.3	WR	EAGLE	SHAFT	
631220	0.0	63050	USA	NTS	DOE	37.000	-116.000	0.0	0.0	0.000	0.0	20.0	WR	TUNA	SHAFT	
640116	160000.1	64001	USA	NTS	UGS	37.100	-116.000	0.0	0.0	0.000	20.0	200.0	WR	FORE	SHAFT	
640123	160000.2	64002	USA	NTS	UGS	37.100	-116.000	0.0	0.0	0.000	10.5	10.5	WR	OCOMTO	SHAFT	F
640130	160000.0	64004	USA	NTS	DOE	37.000	-116.000	0.0	0.0	0.000	0.0	20.0	WR	CLUB	SHAFT	
640212	0.0	64005	USA	NTS	DOE	37.000	-116.000	0.0	0.0	0.000	0.0	20.0	WR	SOLENDON	SHAFT	
640213	153000.0	64006	USA	NTS	DOE	37.000	-116.000	0.0	0.0	0.000	0.0	20.0	WR	BUNKER	SHAFT	
640214	110000.0	64003	FRANCE	IN ECKER ALG	DOE	24.054	5.053	0.0	0.0	0.000	0.0	5.0	WR	OPALE	GALLERY	
640218	0.0	64007	USA	NTS	DOE	37.000	-116.000	0.0	0.0	0.000	0.0	20.0	WR	BONEFISH	SHAFT	
640218	0.0	64008	USA	NTS	DOE	37.000	-116.000	0.0	0.0	0.000	0.0	20.0	WR	MACKAREL	SHAFT	
640220	153000.1	64004	USA	NTS	UGS	37.200	-116.000	0.0	0.0	0.000	20.0	200.0	PNE:PLO	KLICKITPAT	SHAFT	
640312	150000.0	64009	USA	NTS	DOE	37.000	-116.000	0.0	0.0	0.000	0.0	20.0	WR	HANDICAP	SHAFT	
640313	160200.1	64005	USA	NTS	UGS	37.100	-116.000	0.0	0.0	0.000	0.0	20.0	WR	PIKE	SHAFT	F
640315	75958.0	64006	USSR	SEMI KAZAKH	UGS	49.700	78.000	5.6	0.0	0.000	20.0	150.0	WE	TUNNEL		
640414	144000.1	64007	USA	NTS	UGS	37.100	-116.000	0.0	0.0	0.000	0.0	20.0	WR	HOOK	SHAFT	
640415	143000.2	64008	USA	NTS	UGS	37.000	-116.000	0.0	0.0	0.000	0.0	20.0	WR	STURGEON	SHAFT	
640417	0.0	64050	USA	NTS	DOE	37.000	-116.000	0.0	0.0	0.000	0.0	20.0	WR	BOGEY	SHAFT	
640424	201000.2	64009	USA	NTS	UGS	37.100	-116.100	0.0	0.0	0.000	20.0	200.0	WR	TURF	SHAFT	
640429	204700.0	64010	USA	NTS	UGS	37.000	-116.000	0.0	0.0	0.000	0.0	20.0	WR	PIPEFISH	SHAFT	
640507	0.0	64051	USA	NTS	DOE	37.000	-116.000	0.0	0.0	0.000	0.0	20.0	WR	DRIVER	SHAFT	
640514	144000.1	64011	USA	NTS	UGS	37.100	-116.000	0.0	0.0	0.000	0.0	20.0	WR	BACKSWING	SHAFT	
640515	161500.1	64012	USA	NTS	UGS	37.000	-116.100	0.0	0.0	0.000	0.0	20.0	WR	MINNOW	SHAFT	
640516	60058.1	64013	USSR	SEMI KAZAKH	UGS	49.900	78.300	5.6	0.0	0.000	20.0	150.0	WR	TUNNEL		
640606	0.0	64014	USSR	SEMI KAZAKH	MTM	50.000	78.000	0.0	0.0	0.000	0.001	20.0	FMS	TUNNEL		
640611	164500.2	64015	USA	NTS	UGS	37.200	-116.100	0.0	0.0	0.000	0.0	20.0	PNE:PLO	ACE	SHAFT	
640612	140100.0	64052	USA	NTS	DOE	37.000	-116.000	0.0	0.0	0.000	0.0	20.0	WR	BITTERLING	SHAFT	
640615	134000.0	64016	FRANCE	IN ECKER ALG	DOE	24.067	5.034	0.0	0.0	0.000	0.0	5.0		TOPAZE	GALLERY	
640618	0.0	64053	USA	NTS	DOE	37.000	-116.000	0.0	0.0	0.000	0.0	20.0	WR	DUFFER	SHAFT	
640625	133000.1	64017	USA	NTS	UGS	37.100	-116.100	0.0	0.0	0.000	0.0	20.0	WR	FADE	SHAFT	
640630	133300.1	64018	USA	NTS	UGS	37.200	-116.100	0.0	0.0	0.000	0.0	20.0	PNE:PLO	DUB	SHAFT	
640716	131500.2	64019	USA	NTS	UGS	37.200	-116.100	0.0	0.0	0.000	20.0	200.0	WR	BYE	SHAFT	
640717	171800.0	64020	UK	NTS	DOE	37.000	-116.000	0.0	0.0	0.000	0.0	20.0	WR	CORMORANT	SHAFT	
640719	55958.9	64021	USSR	SEMI KAZAKH	UGS	49.900	78.100	5.5	0.0	0.000	20.0	150.0	FMS	TUNNEL		
640723	0.0	64054	USA	NTS	DOE	37.000	-116.000	0.0	0.0	0.000	0.0	20.0	WR	LINKS	SHAFT	
640724	0.0	64055	USA	NTS	DOE	37.000	-116.000	0.0	0.0	0.000	0.0	20.0	WR	TROGON	SHAFT	
640818	0.0	64022	USSR	SEMI KAZAKH	MTM	50.000	78.000	0.0	0.0	0.000	0.001	20.0	WR	TUNNEL		
640819	160000.0	64023	USA	NTS	UGS	37.200	-116.100	0.0	0.0	0.000	4.4	4.4	WR	ALVA	SHAFT	
640822	221700.1	64024	USA	NTS	UGS	37.100	-116.000	0.0	0.0	0.000	0.0	20.0	WR	CANVASBACK	SHAFT	
640827	0.0	64056	USA	NTS	DOE	37.000	-116.000	0.0	0.0	0.000	0.0	20.0	SE	PLAYER	SHAFT	
640828	170600.0	64025	USA	NTS	UGS	37.100	-116.000	0.0	0.0	0.000	0.0	20.0	WR	HADDOCK	SHAFT	
640904	181500.0	64026	USA	NTS	UGS	37.000	-116.000	0.0	0.0	0.000	0.0	20.0	WR	GUANAY	SHAFT	
640911	0.0	64057	USA	NTS	DOE	37.000	-116.000	0.0	0.0	0.000	0.0	20.0	WR	SPOON	SHAFT	
640918	75954.8	64027	USSR	NZ RUSS	UGS	72.900	55.200	4.3	0.0	0.000	0.001	20.0	FMS	TUNNEL		
640925	0.0	64058	UK	NTS	DOE	37.000	-116.000	0.0	0.0	0.000	0.0	0.0	WR	COURSER	SHAFT	
640930	0.0	64028	USSR	SEMI KAZAKH	MTM	50.000	78.000	0.0	0.0	0.000	0.001	20.0	FMS	TUNNEL		
641002	200300.0	64029	USA	NTS	DOE	37.000	-116.000	0.0	0.0	0.000	0.0	20.0	WR	AUK	SHAFT	
641009	140000.0	64030	USA	NTS	DOE	37.000	-116.000	0.0	0.0	0.000	38.0	38.0	PNE:PLO	PAR	SHAFT	F
641016	70000.0	64031	CHINA	LOP NOR	DOE	41.500	89.000	0.0	0.0	0.000	22.0	22.0	WR	TOWER		
641016	160000.0	64032	USA	NFS	DOE	37.000	-116.000	0.0	0.0	0.000	0.0	20.0	WR	BARBELTURNSTONE	SHAFT	2x
641022	160000.0	64033	USA	HATTIESB MS	DOE	31.000	-89.000	0.0	0.0	0.000	5.3	5.3	PNE:V	SALMON	SHAFT	
641023	0.0	64059	USA	NTS	DOE	37.000	-116.000	0.0	0.0	0.000	0.0	20.0	WR	GARDEN	SHAFT	
641025	75958.8	64034	USSR	NZ RUSS	UGS	73.500	53.700	4.9	0.0	0.000	0.001	20.0	PNE	TUNNEL		
641031	170500.0	64035	USA	NTS	DOE	37.000	-116.000	0.0	0.0	0.000	0.0	20.0	WR	FOREST	SHAFT	
641105	150000.1	64036	USA	NTS	UGS	37.200	-116.100	0.0	0.0	0.000	12.0	12.0	PNE:PLO	HANDCAR	SHAFT	
641116	55957.4	64037	USSR	SEMI KAZAKH	UGS	49.700	78.000	6.0	0.0	0.000	20.0	150.0	PNE	TUNNEL		
641128	103000.0	64038	FRANCE	IN ECKER ALG	DOE	24.042	5.041	0.0	0.0	0.000	0.0	20.0	WR	TURQUOISE	GALLERY	
641205	211500.1	64039	USA	NTS	UGS	37.100	-116.100	0.0	0.0	0.000	20.0	200.0	WR	CREPE	SHAFT	
641205	231928.5	64040	USA	NTS	UGS	37.100	-116.100	0.0	0.0	0.000	0.0	20.0	WR	DRILL	SHAFT	F
641216	200000.0	64041	USA	NTS	UGS	37.000	-116.000	0.0	0.0	0.000	1.3	1.3	WR	PARROT	SHAFT	F
641216	201000.1	64042	USA	NTS	UGS	37.000	-116.100	0.0	0.0	0.000	2.7	2.7	WE	MUDPACK	SHAFT	
641216	0.0	64060	USA	NTS	DOE	37.000	-116.000	0.0	0.0	0.000	0.0	20.0	WR/SE	CASSOWARYHOOPOE	SHAFT	
641218	193500.1	64043	USA	NTS	UGS	37.000	-116.300	0.0	0.0	0.000	0.092	0.092	PNE:PLO	SULKY	SHAFT	F
650114	160000.0	65001	USA	NTS	ISC	37.070	-116.010	0.0	0.0	0.000	0.0	20.0	WR	WOOL	SHAFT	
650115	55958.4	65002	USSR	SEMI KAZAKH	ISC	49.880	78.960	5.8	0.0	0.000	140.0	140.0	PNE	CHAGAN	SHAFT	F
650129	182200.0	65051	USA	NTS	DOE	37.000	-116.000	0.0	0.0	0.000	0.0	20.0	WR	TERN	SHAFT	
650204	0.0	65003	USSR	SEMI KAZAKH	MTM	50.000	78.000	0.0	0.0	0.000	0.001	20.0	FMS	TUNNEL		
650204	152959.7	65004	USA	NTS	ISC	37.070	-116.030	0.0	0.0	0.000	0.0	20.0	WR	CASHMERE	SHAFT	
650212	151000.0	65005	USA	NTS	DOE	37.000	-116.000	0.0	0.0	0.000	0.33	0.33	WR	ALPACA	SHAFT	F
650216	173001.6	65006	USA	NTS	ISC	36.990	-116.000	0.0	0.0	0.000	10.1	10.1	WR	MERLIN	SHAFT	
650218	161847.3	65007	USA	NTS	ISC	36.720	-115.940	0.0	0.0	0.000	0.0	20.0	WE	WISHBONE	SHAFT	
650219	0.0	65052	USA	NTS	DOE	37.000	-116.000	0.0	0.0	0.000	0.0	20.0	WR	SEERSUCKER	SHAFT	
650227	112958.6	65008	FRANCE	IN ECKER ALG	ISC	24.160	5.030	5.6	0.0	0.000	0.0	150.0	WR	SAPHIR	GALLERY	
650303	61456.8	65009	USSR	SEMI KAZAKH	ISC	49.810	78.130	5.5	0.0	0.000	0.001	20.0	WR	TUNNEL		
650303	191303.2	65010	USA	NTS	ISC	37.010	-116.080	0.0	0.0	0.000	20.0	200.0	WR	WAGTAIL	SHAFT	
650320	152300.0	65053	USA	NTS	DOE	37.000	-116.000	0.0	0.0	0.000	0.0	20.0	WR	SUEDE	SHAFT	
650326	153410.6	65011	USA	NTS	ISC	37.110	-116.090	0.0	0.0	0.000	20.0	200.0	WR	CUP	SHAFT	
650327	0.0	65012	USSR	SEMI KAZAKH	MTM	50.000	78.000	0.0	0.0	0.000	0.001	20.0	WR	TUNNEL		
650330	0.0	65013	USSR	BASHKIR RUSS	MTM	53.000	56.000	0.0	0.0	0.000	2.3	2.3	PNE	BUTAN 1+2	SHAFT	2x
650405	210003.3	65015	USA	NTS	ISC	36.950	-116.080	0.0	0.0	0.000	0.0	20.0	WR	KESTREL	SHAFT	
650414	131402.6	65016	USA	NTS	ISC	37.260	-116.540	0.0	0.0	0.000	4.3	4.3	PNE:PLO	PALANQUIN	SHAFT	F
650421	220003.4	65017	USA	NTS	ISC	36.970	-116.230	5.0	0.0	0.000	0.0	20.0				

651216	191502.6	65049	USA	NTS	ISC	37.020	-116.050	5.3	0.0	0.000	20.0	200.0	WR	BUFF	SHAFT	
651224	45958.4	65050	USSR	SEMI KAZAKH	ISC	49.900	78.100	5.2	0.0	0.000	0.001	20.0	PNE		TUNNEL	
660113	153743.0	66001	USA	NTS	ISC	37.170	-116.020	0.0	0.0	0.000	0.0	20.0	WR	MAXWELL	SHAFT	
660118	183503.3	66002	USA	NTS	ISC	37.100	-116.050	0.0	0.0	0.000	20.0	200.0	WR	LAMPLACK	SHAFT	
660118	0.0	66064	USA	NTS	DOE	37.000	-116.000	0.0	0.0	0.000	0.0	20.0	WR	SIENNA	SHAFT	
660121	182759.3	66003	USA	NTS	ISC	37.030	-115.970	0.0	0.0	0.000	0.0	20.0	WR	DOVEKIE	SHAFT	
660122	151700.0	66065	USA	NTS	DOE	37.000	-116.000	0.0	0.0	0.000	0.0	20.0	WR	REC	SHAFT	
660203	181737.1	66004	USA	NTS	ISC	37.070	-116.100	0.0	0.0	0.000	0.0	20.0	WR	PLAID II	SHAFT	
660213	45757.9	66005	USSR	SEMI KAZAKH	ISC	49.770	78.100	6.1	0.0	0.000	125.0	125.0	PNE		TUNNEL	
660216	110000.0	66006	FRANCE	IN ECKER ALG	ISC	24.000	5.000	0.0	0.0	0.000	0.0	20.0	WR	GRENAT	GALLERY	
660224	155510.5	66007	USA	NTS	ISC	37.170	-116.420	0.0	0.0	0.000	19.0	19.0	WR	REX	SHAFT	
660305	181500.7	66008	USA	NTS	ISC	37.150	-116.110	0.0	0.0	0.000	0.0	20.0	WE	REDHOT	TUNNEL	F
660307	184100.5	66009	USA	NTS	ISC	36.940	-116.130	0.0	0.0	0.000	0.0	20.0	WR/SE	FINFOOT/CINNAMO	SHAFT	2x
660312	180413.2	66010	USA	NTS	ISC	37.080	-116.090	0.0	0.0	0.000	0.0	20.0	WR	CLYMER	SHAFT	
660318	190002.7	66011	USA	NTS	ISC	36.900	-116.150	0.0	0.0	0.000	0.0	20.0	WR	PURPLE	SHAFT	
660320	54957.8	66012	USSR	SEMI KAZAKH	ISC	49.720	78.070	6.6	0.0	0.000	100.0	100.0	WR		TUNNEL	
660324	145529.0	66013	USA	NTS	ISC	37.050	-116.160	0.0	0.0	0.000	0.0	20.0	PNE:PLO	TEMPLAR	SHAFT	F
660401	184001.1	66014	USA	NTS	ISC	37.050	-115.880	0.0	0.0	0.000	0.0	20.0	WR	LIME	SHAFT	
660406	135719.9	66015	USA	NTS	ISC	37.080	-116.130	0.0	0.0	0.000	0.0	20.0	WR	STUTZ	SHAFT	
660407	222733.4	66016	USA	NTS	ISC	36.950	-116.010	0.0	0.0	0.000	0.0	20.0	WR	TOMATO	SHAFT	
660414	141346.4	66017	USA	NTS	ISC	37.200	-116.450	0.0	0.0	0.000	70.0	70.0	WR	DURYEA	SHAFT	
660421	35758.1	66018	USSR	SEMI KAZAKH	ISC	49.860	78.200	6.1	0.0	0.000	0.001	20.0	WR		TUNNEL	
660422	25804.0	66063	USSR	AZGIR KAZAKH	DIS	47.900	47.700	0.0	0.0	0.000	1.1	1.1	PNE		SHAFT	F
660423	0.0	66071	USA	NTS	DOE	37.000	-116.000	0.0	0.0	0.000	1.4	1.4	WR	FENTON	SHAFT	
660425	183803.3	66019	USA	NTS	ISC	36.820	-115.960	0.0	0.0	0.000	0.0	20.0	WE	PINSTRIP	SHAFT	F
660429	0.0	66066	USA	NTS	DOE	37.000	-116.000	0.0	0.0	0.000	0.0	20.0	SE	OCHRE	SHAFT	
660504	133219.0	66020	USA	NTS	ISC	37.170	-115.960	0.0	0.0	0.000	0.0	20.0	WR	TRAVELER	SHAFT	
660505	140003.1	66021	USA	NTS	ISC	36.980	-116.040	4.4	0.0	0.000	12.0	12.0	WR	CYCLAMEN	SHAFT	
660506	150003.1	66022	USA	NTS	ISC	37.320	-116.320	5.4	0.0	0.000	73.0	73.0	WR	CHARTREUSE	SHAFT	
660507	35758.2	66023	USSR	SEMI KAZAKH	ISC	49.740	77.950	4.8	0.0	0.000	4.0	4.0	PNE		TUNNEL	
660509	80000.0	66076	CHINA	LOP NOR	DOE	41.500	89.000	0.0	0.0	0.000	250.0	250.0	WR		AIRDROP	
660512	193726.1	66024	USA	NTS	ISC	37.080	-116.140	4.3	0.0	0.000	0.0	20.0	WR	TAPESTRY	SHAFT	
660513	133002.1	66025	USA	NTS	ISC	37.090	-116.000	5.6	0.0	0.000	20.0	200.0	WR	PIRANHA	SHAFT	
660519	135630.6	66026	USA	NTS	ISC	37.110	-116.030	5.9	0.0	0.000	20.0	200.0	WR	DUMONT	SHAFT	
660527	200003.0	66027	USA	NTS	ISC	37.160	-116.140	5.0	0.0	0.000	22.0	22.0	WE	DISCUS THROWER	SHAFT	
660602	153001.8	66028	USA	NTS	ISC	37.200	-116.000	5.6	0.0	0.000	62.0	62.0	WE	PILE DRIVER	TUNNEL	
660603	140002.2	66029	USA	NTS	ISC	37.030	-116.010	5.7	0.0	0.000	20.0	200.0	WR	TAN	SHAFT	
660610	143002.6	66030	USA	NTS	ISC	36.980	-116.030	0.0	0.0	0.000	0.0	20.0	WR	PUCE	SHAFT	
660615	170000.0	66031	USA	NTS	DOE	37.000	-116.000	0.0	0.0	0.350	0.0	20.0	WE	DOUBLE PLAY	TUNNEL	
660615	180300.0	66032	USA	NTS	DOE	37.000	-116.000	0.0	0.0	0.500	20.0	200.0	WR	KANKAKEE	SHAFT	F
660625	171259.6	66033	USA	NTS	ISC	37.100	-116.100	0.0	0.0	0.000	25.0	25.0	PNE:PLO	VULCAN	SHAFT	
660629	65758.3	66034	USSR	SEMI KAZAKH	ISC	49.920	78.060	5.6	0.0	0.000	20.0	150.0	PNE		TUNNEL	
660630	221502.7	66035	USA	NTS	ISC	37.320	-116.280	6.1	0.0	0.000	365.0	365.0	WR	HALFBREAK	SHAFT	
660702	153400.0	66036	FRANCE	MURUROA	DOE	-22.000	-139.000	0.0	0.0	0.000	0.0	200.0	WR	ALDEBARAN	BARGE	
660719	150500.0	66037	FRANCE	MURUROA	DOE	-22.000	-139.000	0.0	0.0	0.000	0.0	200.0	WR	TAMOUR	AIRDROP	
660721	35800.0	66038	USSR	SEMI KAZAKH	ISC	50.000	78.000	5.9	0.0	0.000	20.0	150.0	WR		TUNNEL	
660721	120000.0	66072	FRANCE	MURUROA	SPA	-22.000	-139.000	0.0	0.0	0.000	0.0	0.0	SE	GANYMEDE	TOWER	
660728	153332.5	66039	USA	NTS	ISC	37.000	-115.890	0.0	0.0	0.000	0.0	20.0	PNE:PLO	SAXON	SHAFT	F
660805	35757.9	66040	USSR	SEMI KAZAKH	ISC	49.830	78.050	5.4	0.0	0.000	0.001	20.0	WR		TUNNEL	
660810	131603.0	66041	USA	NTS	ISC	37.300	-116.000	0.0	0.0	0.000	0.0	20.0	WR	ROVENA	SHAFT	
660812	0.0	66067	USA	NTS	DOE	37.000	-116.000	0.0	0.0	0.000	0.0	20.0	SE	TANGERINE	SHAFT	
660819	35301.4	66042	USSR	SEMI KAZAKH	ISC	50.500	77.860	5.1	0.0	0.000	0.001	20.0	PNE		TUNNEL	
660907	35158.1	66043	USSR	SEMI KAZAKH	ISC	49.900	77.920	4.8	0.0	0.000	0.001	20.0	FMS		TUNNEL	
660911	173000.0	66044	FRANCE	MURUROA	DOE	-22.000	-139.000	0.0	0.0	0.000	0.0	200.0	WR	BETELGEUSE	BALLOON	
660912	152959.8	66045	USA	NTS	ISC	36.840	-115.920	4.6	0.0	0.000	7.8	7.8	WE	DERRINGER	SHAFT	F
660923	175958.5	66046	USA	NTS	ISC	37.130	-116.020	0.0	0.0	0.000	0.0	20.0	WR	DAIQUIRI	SHAFT	
660924	170000.0	66047	FRANCE	FANGATAUFA	DOE	-22.000	-139.000	0.0	0.0	0.000	0.0	200.0	WR	RIGEL	BARGE	
660929	144532.1	66048	USA	NTS	ISC	37.120	-115.980	0.0	0.0	0.000	0.0	20.0	WR	NEWARK	SHAFT	
660930	55952.8	66049	USSR	UZBEK	UGS	38.800	64.500	5.1	0.0	0.000	30.0	30.0	PNE		SHAFT	F
661004	210000.0	66050	FRANCE	MURUROA	DOE	-22.000	-139.000	0.0	0.0	0.000	200.0	1000.0	WR	SIRIUS	BARGE	
661015	0.0	66068	USA	NTS	DOE	37.000	-116.000	0.0	0.0	0.000	0.0	20.0	WR	KHAKI	SHAFT	
661019	35757.8	66051	USSR	SEMI KAZAKH	ISC	49.770	78.030	6.3	0.0	0.000	20.0	150.0	WR		TUNNEL	
661027	11000.0	66052	CHINA	LOP NOR	DOE	41.500	89.000	0.0	0.0	0.000	12.0	12.0	WR		ROCKET	
661027	55757.9	66053	USSR	NZ RUSS	ISC	73.400	54.570	6.4	0.0	0.000	150.0	1500.0	WR		TUNNEL	
661027	0.0	66073	USSR	NZ RUSS	MTM	73.000	55.000	0.0	0.0	0.000	150.0	1500.0	WR		TUNNEL	
661029	0.0	66074	USSR	SEMI KAZAKH	MTM	50.000	78.000	0.0	0.0	0.000	0.001	20.0	WR		TUNNEL	
661105	144501.2	66054	USA	NTS	ISC	37.170	-115.960	0.0	0.0	0.000	0.0	20.0	PNE:PLO	SIMMS	SHAFT	F
661111	120000.7	66055	USA	NTS	ISC	37.100	-116.000	0.0	0.0	0.000	0.0	20.0	WR	AJAX	SHAFT	
661118	150201.7	66056	USA	NTS	ISC	37.000	-116.070	0.0	0.0	0.000	0.0	20.0	WR	CERISE	SHAFT	
661119	0.0	66075	USSR	SEMI KAZAKH	MTM	50.000	78.000	0.0	0.0	0.000	0.001	20.0	WR		TUNNEL	
661122	0.0	66069	USA	NTS	DOE	37.000	-116.000	0.0	0.0	0.000	0.0	20.0	SE	VIGIL	SHAFT	
661203	50200.0	66057	USSR	SEMI KAZAKH	DOE	50.000	78.000	0.0	0.0	0.000	0.001	20.0	WR/PNE		SHAFT	2x
661203	121500.0	66058	USA	HATTIESB MS	DOE	31.000	-89.000	0.0	0.0	0.900	0.380	0.380	PNE:V	STERLING	SHAFT	
661213	210002.7	66059	USA	NTS	ISC	36.820	-115.960	4.6	0.0	0.000	0.0	20.0	WE	NEWPOINT	SHAFT	
661213	175000.0	66070	USA	NTS	DOE	37.000	-116.000	0.0	0.0	0.000	0.0	20.0	WR	SIDECAR	SHAFT	
661218	45757.9	66060	USSR	SEMI KAZAKH	ISC	49.920	77.760	5.8	0.0	0.000	20.0	150.0	PNE		SHAFT	
661220	153001.9	66061	USA	NTS	ISC	37.320	-116.360	6.3	0.0	0.000	870.0	870.0	WR	GREELEY	SHAFT	
661228	40000.0	66062	CHINA	LOP NOR	DOE	41.500	89.000	0.0	0.0	0.000	122.0	122.0	WR		TOWER	F
670118	0.0	67050	USA	NTS	DOE	37.000	-116.000	0.0	0.0	0.000	0.0	20.0	WR	RIVET 1	SHAFT	
670119	164502.5	67001	USA	NTS	ISC	37.140	-116.180	5.3	0.0	0.000	39.0	39.0	WR	NASH	SHAFT	F
670120	174005.5	67002	USA	NTS	ISC	37.080	-116.010	5.3	0.0	0.000	20.0	200.0	WR	BOURBON	SHAFT	
670126	0.0	67051	USA	NTS	DOE	37.000	-116.000	0.0	0.0	0.000	0.0	20.0	WR	RIVET 2	SHAFT	
670130	0.0	67063	USSR	SEMI KAZAKH	MTM	50.000	78.000	0.0	0.							

670902	0.0	67064	USSR	SEMI KAZAKH	MTM	50.000	78.000	0.0	0.0	0.000	0.001	20.0	WR		TUNNEL	
670907	134503.1	67032	USA	NTS	ISC	37.070	-116.070	5.0	0.0	0.000	20.0	200.0	WR	YARD	SHAFT	
670915	0.0	67059	USA	NTS	DOE	37.000	-116.000	0.0	0.0	0.000	0.0	20.0	WR	GILROY	SHAFT	
670916	40358.2	67033	USSR	SEMI KAZAKH	ISC	50.010	77.800	5.3	0.0	0.000	0.001	20.0	WR		SHAFT	
670921	204504.1	67034	USA	NTS	ISC	37.000	-116.120	0.0	0.0	0.000	2.2	2.2	PNE:PLO	MARVEL	SHAFT	F
670922	50357.8	67035	USSR	SEMI KAZAKH	ISC	50.020	77.720	5.2	0.0	0.000	10.0	10.0	WR		SHAFT	
670927	170002.4	67036	USA	NTS	ISC	37.100	-116.000	5.7	0.0	0.000	20.0	200.0	WR	ZAZA	SHAFT	
671006	70002.0	67049	USSR	TYUMEN RUSS	DIS	57.690	65.270	0.0	0.0	0.000	0.3	0.3	PNE	TAVDA	SHAFT	
671017	50358.0	67037	USSR	SEMI KAZAKH	ISC	49.800	78.030	5.6	0.0	0.000	0.001	20.0	PNE		TUNNEL	2x
671018	143002.0	67038	USA	NTS	ISC	37.090	-116.030	5.7	0.0	0.000	20.0	200.0	WR	ANPHER	SHAFT	
671021	45958.4	67039	USSR	NZ RUSS	ISC	73.400	54.420	5.9	0.0	0.000	20.0	1500.0	WR		TUNNEL	F2x
671025	143001.0	67040	USA	NTS	ISC	36.990	-116.030	0.0	0.0	0.000	0.0	20.0	WR	SAZERAC	SHAFT	
671025	0.0	67060	USA	NTS	DOE	37.000	-116.000	0.0	0.0	0.000	0.0	20.0	WR	COGNAC	SHAFT	
671025	0.0	67061	USA	NTS	DOE	37.000	-116.000	0.0	0.0	0.000	0.0	20.0	WR	WORTH	SHAFT	
671030	60357.9	67041	USSR	SEMI KAZAKH	ISC	49.810	78.020	5.3	0.0	0.000	0.001	20.0	WR		TUNNEL	
671108	150003.1	67042	USA	NTS	ISC	37.020	-116.060	5.1	0.0	0.000	0.0	20.0	WR	COBBLER	SHAFT	
671122	40357.5	67043	USSR	SEMI KAZAKH	ISC	49.930	77.400	4.8	0.0	0.000	0.001	20.0	WR		SHAFT	
671206	0.0	67062	USA	NTS	DOE	37.000	-116.000	0.0	0.0	0.000	0.0	20.0	WR	POLKA	SHAFT	
671208	60357.4	67044	USSR	SEMI KAZAKH	ISC	49.880	78.210	5.4	0.0	0.000	0.001	20.0	WR		TUNNEL	
671210	193001.3	67045	USA	FARMINGT NM	ISC	36.670	-107.170	4.8	0.0	0.000	29.0	29.0	PNE:PLO	GASBUGGY	SHAFT	F
671215	150003.5	67046	USA	NTS	ISC	37.010	-116.070	0.0	0.0	0.000	0.0	20.0	WR	STILT	SHAFT	
671224	0.0	67047	CHINA	LOP NOR	DOE	41.500	89.000	0.0	0.0	0.000	15.0	25.0	WR		AIRDROP	
680107	34657.6	68001	USSR	SEMI KAZAKH	ISC	49.740	78.320	5.1	0.0	0.000	0.001	20.0	PNE		TUNNEL	
680118	163005.1	68002	USA	NTS	ISC	37.230	-116.190	0.0	0.0	0.000	7.4	7.4	WE	HUPMOBILE	SHAFT	F
680119	150003.7	68003	USA	NTS	ISC	37.180	-114.120	0.0	0.0	0.000	20.0	200.0	WR	STACCATO	SHAFT	
680119	181502.2	68004	USA	C. NEVADA	DOE	38.650	-116.200	6.3	0.0	0.000	200.0	1000.0	WR	FAULTLESS	SHAFT	
680124	0.0	68063	USA	NTS	DOE	37.000	-116.000	0.0	0.0	0.000	0.0	20.0	WR	BRUSH	SHAFT	
680126	160003.8	68005	USA	NTS	ISC	37.240	-116.450	0.0	0.0	0.000	2.3	2.3	PNE:PLO	CABRIOLET	CRATER	F
680131	153001.0	68057	USA	NTS	DIS	36.890	-116.120	0.0	0.0	0.000	0.0	20.0	WR	MALLET	SHAFT	
680221	153001.9	68006	USA	NTS	ISC	37.100	-116.020	5.8	0.0	0.000	20.0	200.0	WR	KNOX	SHAFT	
680221	0.0	68064	USA	NTS	DOE	37.000	-116.000	0.0	0.0	0.000	0.0	20.0	WR	TORCH	SHAFT	
680229	170832.6	68007	USA	NTS	ISC	37.120	-116.200	5.0	0.0	0.000	0.0	20.0	WE	DORSALFIN	TUNNEL	
680305	0.0	68065	USA	NTS	DOE	37.000	-116.000	0.0	0.0	0.000	0.0	20.0	WR	RUSSET	SHAFT	
680312	170400.1	68008	USA	NTS	ISC	37.030	-116.380	0.0	0.0	0.000	1.1	1.1	PNE:PLO	BUGGY A-E	CRATER	5x
680314	151900.0	68009	USA	NTS	DOE	37.000	-116.000	0.0	0.0	0.200	1.5	1.5	WR	POMMARD	SHAFT	
680322	150002.1	68010	USA	NTS	ISC	37.300	-116.270	5.6	0.0	0.000	20.0	200.0	WR	STINGER	SHAFT	
680325	184429.8	68015	USA	NTS	ISC	36.830	-115.930	0.0	0.0	0.000	0.0	20.0	WE	MILK SHAKE	SHAFT	
680404	0.0	68066	USA	NTS	DOE	37.000	-116.000	0.0	0.0	0.000	0.0	20.0	WR	BEVEL	SHAFT	
680410	140002.8	68016	USA	NTS	ISC	37.120	-116.080	4.6	0.0	0.000	0.0	200.0	WR	NOOR/THROW	SHAFT	F2x
680418	140503.1	68017	USA	NTS	ISC	37.100	-116.070	4.9	0.0	0.000	20.0	200.0	WR	SHUFFLE	SHAFT	
680423	170131.2	68018	USA	NTS	ISC	37.440	-116.190	0.0	0.0	0.000	0.0	20.0	PNE:V	SCROLL	SHAFT	
680424	103557.3	68019	USSR	SEMI KAZAKH	ISC	49.840	78.070	5.0	0.0	0.000	0.001	20.0	WR		TUNNEL	
680426	150001.0	68020	USA	NTS	ISC	37.310	-116.410	6.2	0.0	0.000	1300.0	1300.0	WR	BOXCAR	SHAFT	
680503	160001.0	68058	USA	NTS	DIS	37.000	-115.990	0.0	0.0	0.000	0.0	20.0	WR	HATCHET	SHAFT	
680508	0.0	68067	USA	NTS	DOE	37.000	-116.000	0.0	0.0	0.000	0.0	20.0	WR	CROCK	SHAFT	
680517	130003.8	68021	USA	NTS	ISC	37.100	-116.060	4.7	0.0	0.000	20.0	200.0	WR	CLARKSMOBILE	SHAFT	
680521	35900.0	68022	USSR	PAMUK UZBEK	ZAR	0.000	0.000	0.0	0.0	0.000	47.0	47.0	PNE		SHAFT	
680523	0.0	68079	USSR	SEMI KAZAKH	MTM	0.000	0.000	0.0	0.0	0.000	0.0	0.001	WR		TUNNEL	
680528	0.0	68068	USA	NTS	DOE	37.000	-116.000	0.0	0.0	0.000	0.0	20.0	WR	ADZE	SHAFT	
680605	0.0	68069	USA	NTS	DOE	37.000	-116.000	0.0	0.0	0.000	0.0	20.0	WR	WEMBLEY	SHAFT	
680606	213002.6	68023	USA	NTS	DOE	37.200	-116.070	0.0	0.0	0.000	0.0	20.0	WR	TUB A-F	SHAFT	5x
680611	30557.7	68024	USSR	SEMI KAZAKH	ISC	49.800	78.130	5.2	0.0	0.000	0.001	20.0	WR		TUNNEL	
680615	140001.4	68025	USA	NTS	ISC	37.260	-116.270	5.9	0.0	0.000	20.0	200.0	WR	RICKEY	SHAFT	
680619	50557.4	68026	USSR	SEMI KAZAKH	ISC	49.960	79.050	5.4	0.0	0.000	0.001	20.0	FMS		SHAFT	
680625	0.0	68070	USA	NTS	DOE	37.000	-116.000	0.0	0.0	0.000	0.0	20.0	WR	FUNNEL	SHAFT	
680625	0.0	68071	USA	NTS	DOE	37.000	-116.000	0.0	0.0	0.000	0.0	20.0	WR	SEVILLA	SHAFT	
680628	133301.2	68027	USA	NTS	ISC	37.180	-116.480	5.3	0.0	0.000	20.0	200.0	WR	CHATEAUGAY	SHAFT	
680701	40200.9	68028	USSR	AZGR KAZAKH	ISC	47.850	47.720	5.5	0.0	0.000	27.0	27.0	PNE		SHAFT	
680707	220000.0	68029	FRANCE	MURUROA	DOE	-22.000	-139.000	0.0	0.0	0.000	0.0	200.0	WR	CAPELLA	BALLOON	
680712	120757.0	68030	USSR	SEMI KAZAKH	ISC	49.770	78.090	5.3	0.0	0.000	0.001	20.0	WR		TUNNEL	2x
680715	190000.0	68031	FRANCE	MURUROA	DOE	-22.000	-139.000	0.0	0.0	0.000	0.0	1000.0	WR	CASTOR	BALLOON	
680717	0.0	68072	USA	NTS	DOE	37.000	-116.000	0.0	0.0	0.000	0.0	20.0	WR	SPUD	SHAFT	
680730	130001.0	68032	USA	NTS	ISC	37.070	-116.070	0.0	0.0	0.000	20.0	200.0	WR	TANYA	SHAFT	
680803	210000.0	68033	FRANCE	MURUROA	DOE	-22.000	-139.000	0.0	0.0	0.000	0.0	200.0	WR	POLLUX	BALLOON	
680809	0.0	68073	USA	NTS	DOE	37.000	-116.000	0.0	0.0	0.000	0.0	20.0	WR	IMP	SHAFT	
680815	0.0	68074	USA	NTS	DOE	37.000	-116.000	0.0	0.0	0.000	0.0	20.0	WR	RACK	SHAFT	
680820	40558.3	68034	USSR	SEMI KAZAKH	ISC	50.000	78.020	4.8	0.0	0.000	0.0	20.0	WR/SAM		TUNNEL	F2x
680824	182958.9	68035	FRANCE	FANGATAUFA	UGS	-22.207	-138.809	5.0	0.0	0.000	1000.0	0.0	WR	CANOPUS	BALLOON	F
680827	162959.9	68036	USA	NTS	ISC	36.850	-115.900	0.0	0.0	0.000	0.0	20.0	WE	DIANAMON	SHAFT	
680829	224500.7	68037	USA	NTS	ISC	37.280	-116.290	0.0	0.0	0.000	20.0	200.0	WR	SLED	SHAFT	
680905	40557.5	68038	USSR	SEMI KAZAKH	ISC	49.750	78.150	5.4	0.0	0.000	0.001	20.0	WE		TUNNEL	
680906	140002.0	68039	USA	NTS	ISC	37.210	-116.080	5.5	0.0	0.000	20.0	200.0	WR	NOGGIN	SHAFT	
680908	185959.4	68040	FRANCE	MURUROA	ISC	-21.830	-139.050	4.7	0.0	0.000	1000.0	0.0	WR	PROCYON	BALLOON	F
680912	135959.7	68041	USA	NTS	ISC	36.880	-115.910	5.8	0.0	0.000	0.0	20.0	WR	KNIFE A	SHAFT	
680917	140003.6	68042	USA	NTS	ISC	37.050	-116.130	5.1	0.0	0.000	20.0	200.0	PNE:PLO	STODDARD	SHAFT	F
680924	170503.3	68043	USA	NTS	ISC	37.170	-116.270	5.0	0.0	0.000	0.0	20.0	WE	HUDSON SEAL	TUNNEL	
680929	34257.8	68044	USSR	SEMI KAZAKH	ISC	49.820	78.180	6.3	0.0	0.000	60.0	60.0	WE		TUNNEL	
681003	142900.0	68045	USA	NTS	ISC	37.020	-115.940	0.0	0.0	0.000	0.0	20.0	WR	KNIFE C	SHAFT	
681003	0.0	68075	USA	NTS	DOE	37.000	-116.000	0.0	0.0	0.000	0.0	20.0	SE	WELDER	SHAFT	
681010	143004.0	68059	USA	NTS	DIS	36.990	-116.260	0.0	0.0	0.000	0.0	20.0	WR	WAT	SHAFT	
681021	0.0	68080	USSR	SEMI KAZAKH	MTM	50.000	78.000	0.0	0.0	0.000	0.24	0.24	PNE	TELKEM	SHAFT	
681029	0.0	68076	USA	NTS	DOE	37.000	-116.000	0.0	0.0	0.000	0.0	20.0	WR	HULA	SHAFT	
681029	0.0	68081	USSR	SEMI KAZAKH	MTM	50.000	78.000	0.0	0.0	0.000	0.001					

690515	0.0	69054	USA	NTS	DOE	37.000	-116.000	0.0	0.0	0.000	0.0	20.0	WR	ALIMENT	SHAFT	
690516	40257.3	69011	USSR	SEMI KAZAKH	ISC	49.780	78.160	5.2	0.0	0.000	0.001	20.0	WR	TUNNEL		
690527	141502.4	69012	USA	NTS	ISC	37.010	-116.030	5.0	0.0	0.000	0.0	200.0	WR	TORRIDO	SHAFT	
690527	0.0	69055	USA	NTS	DOE	37.000	-116.000	0.0	0.0	0.000	0.0	20.0	SE	IPECAC A-B	SHAFT	2x
690531	50156.9	69013	USSR	SEMI KAZAKH	ISC	50.010	77.810	5.3	0.0	0.000	0.001	20.0	WR	SHAFT		
690612	140003.7	69014	USA	NTS	ISC	36.950	-116.070	4.5	0.0	0.000	0.0	20.0	WR	TAPPER	SHAFT	
690626	0.0	69056	USA	NTS	DOE	37.000	-116.000	0.0	0.0	0.000	0.0	20.0	WR	BOWL 1-2	SHAFT	2x
690704	24657.3	69015	USSR	SEMI KAZAKH	ISC	49.760	78.200	5.2	0.0	0.000	0.001	20.0	PNE/WR	TUNNEL		2x
690716	130232.3	69016	USA	NTS	ISC	37.070	-116.080	0.0	0.0	0.000	0.0	200.0	WR	ILDRIM	SHAFT	
690716	145502.3	69017	USA	NTS	ISC	37.130	-116.070	5.5	0.0	0.000	0.0	200.0	WR	HUTCH	SHAFT	
690723	24558.0	69018	USSR	SEMI KAZAKH	ISC	49.880	78.230	5.4	0.0	0.000	0.0	16.0	WR	TUNNEL		
690814	143000.0	69019	USA	NTS	ISC	37.200	-116.100	0.0	0.0	0.000	0.0	20.0	WR	SPIDER A-B	TUNNEL	2x
690827	134503.0	69020	USA	NTS	ISC	36.910	-116.010	0.0	0.0	0.000	0.0	20.0	WR	FLIERS	SHAFT	
690827	0.0	69057	USA	NTS	DOE	37.000	-116.000	0.0	0.0	0.000	0.0	20.0	WR	HOREHOUND	SHAFT	
690902	45957.4	69021	USSR	PERM RUSS	ISC	57.350	54.770	4.8	0.0	0.000	7.6	7.6	PNE	GRIFON	SHAFT	
690908	45956.4	69022	USSR	PERM RUSS	ISC	51.310	55.030	4.8	0.0	0.000	7.6	7.6	PNE	GRIFON	SHAFT	
690910	210001.0	69023	USA	GRAND V CO	ISC	39.500	-107.880	5.0	0.0	0.000	40.0	40.0	PNE:PLO	RULISON	SHAFT	F
690911	40157.5	69024	USSR	SEMI KAZAKH	ISC	49.770	78.030	5.0	0.0	0.000	0.001	20.0	PNE	TUNNEL		2x
690912	180221.0	69025	USA	NTS	ISC	36.840	-115.930	0.0	0.0	0.000	0.0	20.0	WE	MINUTE STEAK	SHAFT	
690916	143002.2	69026	USA	NTS	ISC	37.330	-116.430	6.1	0.0	0.000	0.0	1000.0	WR	JORUM	SHAFT	
690920	0.0	69058	USA	NTS	DOE	37.000	-116.000	0.0	0.0	0.000	0.0	20.0	WR	KYACK A-B	SHAFT	2x
690922	161458.9	69027	CHINA	LOP NOR	ISC	41.350	88.330	5.2	0.0	0.000	25.0	25.0	WR	UG	SHAFT	F
690926	65955.9	69028	USSR	STAVRO RUSS	ISC	45.880	42.490	5.6	0.0	0.000	10.0	10.0	PNE	AIRDROP		
690929	84026.2	69029	CHINA	LOP NOR	ISC	40.720	89.300	4.7	0.0	0.000	3000.0	3000.0	WR	SHAFT		
691001	40257.7	69030	USSR	SEMI KAZAKH	ISC	49.810	78.180	5.2	0.0	0.000	0.001	20.0	WR	TUNNEL		2x
691001	0.0	69059	USA	NTS	DOE	37.000	-116.000	0.0	0.0	0.000	0.0	20.0	SE	SEAWEED C-E	SHAFT	F3x
691002	220601.9	69031	USA	AMCHITKA AK	ISC	51.590	179.190	6.4	0.0	0.000	1000.0	1000.0	WR	MILROW	SHAFT	
691008	143001.7	69032	USA	NTS	ISC	37.230	-116.430	5.6	0.0	0.000	200.0	1000.0	WR	PIPKIN	SHAFT	
691014	70006.4	69033	USSR	NZ RUSS	ISC	73.390	54.500	6.3	0.0	0.000	20.0	1500.0	WR	TUNNEL		F3x
691016	0.0	69060	USA	NTS	DOE	37.000	-116.000	0.0	0.0	0.000	0.0	20.0	SE	SEAWEED B	SHAFT	
691029	193003.9	69034	USA	NTS	ISC	37.070	-116.040	0.0	0.0	0.000	11.0	11.0	WR	CRUET	SHAFT	
691029	200002.0	69035	USA	NTS	ISC	37.040	-116.160	0.0	0.0	0.000	16.7	16.7	WR	POD A-D	SHAFT	F
691029	220152.0	69036	USA	NTS	ISC	37.220	-116.090	0.0	0.0	0.000	110.0	110.0	WR	CALABASH	SHAFT	
691030	0.0	69066	USSR	SEMI KAZAKH	MTM	50.000	78.000	0.0	0.0	0.000	0.001	20.0	SAM	TUNNEL		
691113	0.0	69037	USA	NTS	DOE	37.000	-116.000	0.0	0.0	0.000	1.7	1.7	WR	SCUTTLE	SHAFT	
691121	145203.0	69038	USA	NTS	ISC	36.980	-116.020	5.0	0.0	0.000	20.0	200.0	WR	PICCALILLI	SHAFT	
691121	0.0	69061	USA	NTS	DOE	37.000	-116.000	0.0	0.0	0.000	0.0	20.0	WR	PLANER	SHAFT	
691127	0.0	69067	USSR	SEMI KAZAKH	MTM	50.000	78.000	0.0	0.0	0.000	0.001	20.0	PNE	TUNNEL		
691130	33257.3	69039	USSR	SEMI KAZAKH	ISC	49.940	78.980	6.0	0.0	0.000	125.0	125.0	WR	SHAFT		
691205	170002.6	69040	USA	NTS	ISC	37.130	-116.240	4.9	0.0	0.000	0.0	20.0	WE	TUNNEL		
691206	70257.5	69041	USSR	MANGY KAZAKH	ISC	43.790	54.750	5.8	0.0	0.000	30.0	30.0	PNE	SHAFT		
691210	0.0	69062	USA	NTS	DOE	37.000	-116.000	0.0	0.0	0.000	0.0	20.0	WR	CULANIRO A-B	SHAFT	2x
691210	0.0	69063	USA	NTS	DOE	37.000	-116.000	0.0	0.0	0.000	0.0	20.0	WR	TUN A-D	SHAFT	4x
691217	150002.5	69042	USA	NTS	ISC	37.060	-116.000	5.4	0.0	0.000	20.0	200.0	WR	GRAPE A	SHAFT	
691217	151503.7	69043	USA	NTS	ISC	36.900	-116.070	4.7	0.0	0.000	0.0	20.0	WR	LOVAGE	SHAFT	
691218	190003.7	69044	USA	NTS	ISC	37.090	-116.070	5.7	0.0	0.000	0.0	200.0	WR	TERRINE W/Y	SHAFT	2x
691228	34657.8	69045	USSR	SEMI KAZAKH	ISC	49.980	77.790	5.7	0.0	0.000	40.0	40.0	WR	SHAFT		
691229	40158.2	69046	USSR	SEMI KAZAKH	ISC	49.700	78.200	5.1	0.0	0.000	0.001	20.0	PNE	TUNNEL		
700123	163000.4	70001	USA	NTS	ISC	37.110	-119.960	0.0	0.0	0.000	0.0	20.0	WR	FOB G/R/B	SHAFT	3x
700129	70257.7	70002	USSR	SEMI KAZAKH	ISC	49.840	78.270	5.5	0.0	0.000	0.001	20.0	WE	TUNNEL		3x
700130	170003.5	70003	USA	NTS	ISC	36.980	-116.070	0.0	0.0	0.000	0.0	20.0	WR	AJO	SHAFT	
700204	170001.8	70004	USA	NTS	ISC	37.090	-116.010	5.6	0.0	0.000	20.0	200.0	WR	GRAPE B	SHAFT	
700204	0.0	70053	USA	NTS	DOE	37.000	-116.000	0.0	0.0	0.000	20.0	200.0	WR	BELEN	SHAFT	
700205	150002.0	70005	USA	NTS	ISC	37.090	-116.050	0.0	0.0	0.000	25.0	25.0	WR	LABIS	SHAFT	
700211	191502.1	70006	USA	NTS	ISC	37.130	-116.210	0.0	0.0	0.000	0.0	20.0	WE	DIANAMIST	TUNNEL	
700218	0.0	70061	USSR	SEMI KAZAKH	MTM	50.000	78.000	0.0	0.0	0.000	0.0	0.001	SAM	TUNNEL		
700225	142840.8	70008	USA	NTS	ISC	37.070	-115.980	0.0	0.0	0.000	20.0	200.0	WR	CUMMARIN	SHAFT	
700226	153003.4	70009	USA	NTS	ISC	37.110	-116.080	5.3	0.0	0.000	20.0	200.0	WR	YANNIGAN R/B/W	SHAFT	3x
700306	142402.3	70010	USA	NTS	ISC	37.140	-116.080	4.3	0.0	0.000	8.7	8.7	WR	CYATHUS	SHAFT	
700306	145959.7	70011	USA	NTS	ISC	37.080	-116.050	0.0	0.0	0.000	0.0	20.0	WR/SE	ARABIS R/G/B	SHAFT	F3x
700319	140329.9	70012	USA	NTS	ISC	36.930	-116.020	0.0	0.0	0.000	0.0	20.0	WR	JAL	SHAFT	
700323	230502.1	70013	USA	NTS	ISC	37.080	-116.030	0.0	0.0	0.000	20.0	200.0	WR	SHAPER	SHAFT	
700326	190002.4	70014	USA	NTS	ISC	37.300	-116.490	6.4	0.0	0.000	1000.0	10000.0	WR	HANDLEY	SHAFT	
700327	50257.0	70015	USSR	SEMI KAZAKH	ISC	49.770	78.110	5.0	0.0	0.000	0.001	20.0	PNE	TUNNEL		
700421	143003.1	70016	USA	NTS	ISC	37.030	-116.040	4.4	0.0	0.000	12.7	12.7	WE	SNUBBER	SHAFT	
700421	150003.3	70017	USA	NTS	ISC	37.080	-116.100	4.6	0.0	0.000	20.0	200.0	WR	CAN GREEN/RED	SHAFT	2x
700501	141303.4	70018	USA	NTS	ISC	37.000	-116.030	0.0	0.0	0.000	0.0	20.0	WR	BEEBALM	SHAFT	
700501	143959.2	70019	USA	NTS	ISC	37.050	-116.020	4.3	0.0	0.000	0.0	20.0	WR	HOD GREEN/RED	SHAFT	F2x
700501	0.0	70062	USA	NTS	DOE	37.000	-116.000	0.0	0.0	0.000	0.0	20.0	SE	HOD C BLUE	SHAFT	
700505	153001.8	70020	USA	NTS	ISC	37.170	-116.190	5.0	0.0	0.000	0.0	20.0	WE	MINTLEAF	TUNNEL	F
700512	140000.0	70021	USA	NTS	ISC	37.000	-116.200	0.0	0.0	0.000	0.0	20.0	PNE:V	DIAMOND DUST	TUNNEL	
700515	133001.0	70022	USA	NTS	ISC	37.160	-116.030	0.0	0.0	0.000	20.0	200.0	WR	CORNICE Y/G	SHAFT	F2x
700515	180000.0	70023	FRANCE	MURUROA	DOE	-22.000	-139.000	0.0	0.0	0.000	0.0	20.0	WR	ANDROMEDE	BALLOON	
700521	140003.3	70024	USA	NTS	ISC	37.040	-116.030	0.0	0.0	0.000	0.0	20.0	WR	MANZANAS	SHAFT	
700521	141503.5	70025	USA	NTS	ISC	36.990	-116.050	5.1	0.0	0.000	20.0	200.0	WR	MORRONES	SHAFT	
700522	0.0	70026	FRANCE	MURUROA	DOE	-22.000	-139.000	0.0	0.0	0.000	0.0	1000.0	WR	CASSIOPEE	BALLOON	
700526	141600.2	70027	USA	NTS	UGS	37.200	-116.200	5.0	0.0	0.000	0.0	20.0	WE	HUDSON MOON	TUNNEL	
700526	150001.2	70028	USA	NTS	ISC	37.110	-116.030	5.5	0.0	0.000	0.0	105.0	PNE:PLO	FLASK G/Y/R	SHAFT	F3x
700527	0.0	70063	USSR	SEMI KAZAKH	MTM	50.000	78.000	0.0	0.0	0.000	0.001	20.0	WR	TUNNEL		
700528	0.0	70054	USA	NTS	DOE	37.000	-116.000	0.0	0.0	0.000	0.0	20.0	WR	PITON A/B	SHAFT	F2x
700528	0.0	70055	USA	NTS	DOE	37.000	-116.000	0.0	0.0	0.000	0.0	20.0	WR	PITON C	SHAFT	
700530	175958.5	70029	FRANCE	FANGATAUFA	UGS	-22.200	-138.800	4.7	0.0	0.000	0.0	1000.0	WR	DRAGON	BALLOON	
700624	183000.0	700														

710606	40257.1	71006	USSR	SEMI KAZAKH	UGS	50.000	77.800	5.5	0.0	0.000	16.0	16.0	WR		SHAFT	
710612	191500.0	71007	FRANCE	MURUROA	DOE	-22.000	-139.000	0.0	0.0	0.000	0.0	1000.0	WR	ENCELADE	BALLOON	F
710616	145000.0	71008	USA	NTS	UGS	37.000	-116.000	4.9	0.0	0.000	0.0	20.0	WR	EMBUDO	SHAFT	
710619	40357.6	71009	USSR	SEMI KAZAKH	UGS	50.000	77.700	5.5	0.0	0.000	0.001	20.0	WR		SHAFT	
710623	153000.0	71010	USA	NTS	UGS	37.000	-116.000	4.8	0.0	0.000	20.0	200.0	WR	LAGUNA	SHAFT	
710623	0.0	71041	USA	NTS	DOE	37.000	-116.000	0.0	0.0	0.000	0.0	20.0	SE	DEXTER	SHAFT	
710624	140000.2	71011	USA	NTS	UGS	37.100	-116.100	5.2	0.0	0.000	20.0	200.0	WR	HAREBELL	SHAFT	
710629	0.0	71012	USA	NTS	DOE	37.000	-116.000	0.0	0.0	0.000	0.0	20.0	WE	CAMPHOR	TUNNEL	
710630	35657.2	71013	USSR	SEMI KAZAKH	UGS	50.000	79.100	5.4	0.0	0.000	0.001	20.0	WR		SHAFT	
710701	140000.0	71014	USA	NTS	DOE	37.000	-116.000	0.0	0.0	0.000	0.0	20.0	PNE:V	DIAMOND MINE	TUNNEL	
710702	170000.0	71015	USSR	URAL RUSS	DOE	64.000	55.000	0.0	0.0	0.000	2.3	2.3	PNE	GLOBUS	SHAFT	
710704	213000.0	71016	FRANCE	MURUROA	DOE	-22.000	-139.000	0.0	0.0	0.000	0.0	20.0	WR	JAFET	BALLOON	
710708	140000.1	71017	USA	NTS	UGS	37.100	-116.100	5.5	0.0	0.000	83.0	83.0	PNE:PLO	MINIATA	SHAFT	
710709	0.0	71042	USA	NTS	DOE	37.000	-116.000	0.0	0.0	0.000	0.0	20.0	WR	BRACKEN	SHAFT	
710710	165959.3	71018	USSR	URAL RUSS	UGS	64.200	55.200	5.3	0.0	0.000	2.3	2.3	PNE	GLOBUS	SHAFT	
710721	0.0	71043	USA	NTS	DOE	37.000	-116.000	0.0	0.0	0.000	0.0	20.0	WR	APODACA	SHAFT	
710804	0.0	71044	USA	NTS	DOE	37.000	-116.000	0.0	0.0	0.000	0.0	20.0	WR	BARRANCA	SHAFT	
710805	0.0	71045	USA	NTS	DOE	37.000	-116.000	0.0	0.0	0.000	0.0	20.0	WR	NAMA A/M	SHAFT	2x
710806	0.0	71046	USA	NTS	DOE	37.000	-116.000	0.0	0.0	0.000	0.0	20.0	WR	BALTIC	SHAFT	
710808	183000.0	71019	FRANCE	MURUROA	DOE	-22.000	-139.000	0.0	0.0	0.000	0.0	20.0	WR	PHOEBE	BALLOON	
710814	185959.2	71020	FRANCE	MURUROA	UGS	-21.900	-139.000	4.7	0.0	0.000	0.0	1000.0	WR	RHEA	BALLOON	
710818	140000.0	71021	USA	NTS	UGS	37.100	-116.000	5.4	0.0	0.000	20.0	200.0	WR	ALGODONES	SHAFT	
710919	110006.8	71022	USSR	URAL RUSS	UGS	57.800	41.100	4.5	0.0	0.000	2.3	2.3	PNE	GLOBUS	SHAFT	
710922	140000.0	71038	USA	NTS	DIS	37.070	-115.970	0.0	0.0	0.000	0.0	20.0	SE/WR	FRIJoles	SHAFT	4x
710927	55955.2	71023	USSR	NZ RUSS	UGS	73.400	55.100	6.4	5.2	0.000	150.0	1500.0	WR		TUNNEL	4x
710929	140000.0	71024	USA	NTS	UGS	37.000	-116.000	4.4	0.0	0.000	0.0	20.0	WR	PEDERNAL	SHAFT	
710929	0.0	71047	USA	NTS	DOE	37.000	-116.000	0.0	0.0	0.000	0.0	20.0	WR	CHANTILLY	SHAFT	
711004	100002.0	71025	USSR	ARKHAN RUSS	UGS	61.600	47.100	5.1	0.0	0.000	2.3	2.3	PNE	GLOBUS	SHAFT	
711008	143000.1	71026	USA	NTS	UGS	37.100	-116.000	4.7	0.0	0.000	0.0	20.0	WR	CATHAY	SHAFT	
711009	60257.1	71027	USSR	SEMI KAZAKH	UGS	50.000	77.700	5.4	0.0	0.000	12.0	12.0	WR		SHAFT	
711014	143002.0	71039	USA	NTS	DIS	37.320	-116.140	0.0	0.0	0.000	0.0	20.0	WR	LAGOON	SHAFT	
711021	60257.3	71028	USSR	SEMI KAZAKH	UGS	50.000	77.600	5.6	0.0	0.000	23.0	23.0	WR		SHAFT	
711022	50000.4	71029	USSR	ORENBG RUSS	UGS	51.600	54.500	5.3	0.0	0.000	15.0	15.0	PNE	SAPFIR	SHAFT	
711106	220000.1	71030	USA	AMCHITKA AK	UGS	51.500	179.100	6.8	5.7	0.000	0.0	5000.0	WR	CANNIKIN	SHAFT	
711118	60000.0	71031	CHINA	LOP NOR	DOE	41.500	89.000	0.0	0.0	0.000	15.0	15.0	WR		TOWER	
711124	201500.0	71032	USA	NTS	DOE	37.000	-116.000	0.0	0.0	0.000	0.0	20.0	WE	DIAGONAL LINE	SHAFT	
711129	60257.1	71033	USSR	SEMI KAZAKH	UGS	49.800	78.100	5.5	0.0	0.000	0.0	20.0	WR		TUNNEL	2x
711130	154501.0	71040	USA	NTS	DIS	37.160	-116.150	0.0	0.0	0.000	0.0	20.0	WR	PARNASSIA	SHAFT	
711214	210954.2	71034	USA	NTS	UGS	37.100	-116.100	4.7	0.0	0.000	20.0	200.0	WR	CHAENACTIS	SHAFT	
711214	0.0	71048	USA	NTS	DOE	37.000	-116.000	0.0	0.0	0.000	0.0	20.0	WR	HOSPAH	SHAFT	
711214	0.0	71049	USA	NTS	DOE	37.000	-116.000	0.0	0.0	0.000	0.0	20.0	WR	YERBA	SHAFT	
711215	75258.6	71035	USSR	SEMI KAZAKH	UGS	50.000	77.900	4.9	0.0	0.000	0.001	20.0	WE		TUNNEL	
711222	65956.3	71036	USSR	AZGIR KAZAKH	UGS	47.900	48.200	6.0	0.0	0.000	64.0	64.0	PNE		SHAFT	
711230	62057.7	71037	USSR	SEMI KAZAKH	UGS	49.800	78.100	5.8	0.0	0.000	20.0	150.0	WR		TUNNEL	
711230	0.0	71053	USSR	SEMI KAZAKH	MTM	50.000	78.000	0.0	0.0	0.000	0.001	20.0	WR		TUNNEL	
720105	0.0	72042	USA	NTS	DOE	37.000	-116.000	0.0	0.0	0.000	0.0	20.0	WR	MESCALERO	SHAFT	
720107	70000.0	72001	CHINA	LOP NOR	DOE	41.500	89.000	0.0	0.0	0.000	8.0	8.0	WR		AIRDROP	
720203	214459.0	72036	USA	NTS	DIS	36.980	-115.810	0.0	0.0	0.000	0.0	20.0	WR	COWLES	SHAFT	
720210	50257.3	72002	USSR	SEMI KAZAKH	UGS	50.000	78.900	5.5	0.0	0.000	16.0	16.0	WR		SHAFT	
720217	0.0	72043	USA	NTS	DOE	37.000	-116.000	0.0	0.0	0.000	0.0	20.0	WR	DIANTHUS	SHAFT	
720310	45657.4	72003	USSR	SEMI KAZAKH	UGS	49.800	78.200	5.5	0.0	0.000	0.001	20.0	WR		TUNNEL	2x
720318	60000.0	72004	CHINA	LOP NOR	DOE	41.500	89.000	0.0	0.0	0.000	170.0	170.0	WR		AIRDROP	
720323	0.0	72044	USA	NTS	DOE	37.000	-116.000	0.0	0.0	0.000	0.0	20.0	WR	SAPPHO	SHAFT	
720328	42157.3	72005	USSR	SEMI KAZAKH	UGS	49.700	78.200	5.2	0.0	0.000	0.0	20.0	WR/P/SA		TUNNEL	F3x
720330	210001.0	72037	USA	NTS	DIS	36.970	-116.050	0.0	0.0	0.000	0.0	20.0	WR	ONAJA/OCATE	SHAFT	2x
720411	60000.0	72006	USSR	MARY TURKMEN	DOE	37.400	62.000	0.0	0.0	0.000	15.0	15.0	PNE	CRATER	SHAFT	
720419	163200.0	72007	USA	NTS	UGS	37.122	-116.083	4.6	0.0	0.000	0.0	20.0	WR	LONGCHAMPS	SHAFT	
720419	0.0	72045	USA	NTS	DOE	37.000	-116.000	0.0	0.0	0.000	0.0	20.0	WR	JICARILLA	SHAFT	
720420	0.0	72055	USSR	SEMI KAZAKH	MTM	50.000	78.000	0.0	0.0	0.000	0.0	0.001	SAM		TUNNEL	
720502	191501.8	72008	USA	NTS	UGS	37.200	-116.200	5.0	0.0	0.000	0.0	20.0	WE	MISTY NORTH	TUNNEL	
720511	140002.0	72038	USA	NTS	DIS	37.250	-116.110	0.0	0.0	0.000	0.0	20.0	WR	KARA	SHAFT	
720517	141000.2	72009	USA	NTS	UGS	37.120	-116.088	4.4	0.0	0.000	0.0	20.0	WR	ZINNIA	SHAFT	
720519	170000.0	72010	USA	NTS	UGS	37.004	-116.002	4.9	0.0	0.000	0.0	20.0	WR	MONERO	SHAFT	
720607	12757.1	72011	USSR	SEMI KAZAKH	UGS	49.800	78.200	5.5	0.0	0.000	0.001	20.0	WE		TUNNEL	
720607	0.0	72046	USA	NTS	DOE	37.000	-116.000	0.0	0.0	0.000	0.0	20.0	WR	MERIDA	SHAFT	
720625	0.0	72012	FRANCE	MURUROA	DOE	-22.000	-139.000	0.0	0.0	0.000	0.0	20.0	WR	UMBRIEL	BALLOON	
720628	144100.0	72039	USA	NTS	DIS	37.120	-116.040	0.0	0.0	0.000	0.0	20.0	WR	CAPITAN	SHAFT	
720628	163000.0	72047	USA	NTS	DOE	37.000	-116.000	0.0	0.0	0.000	0.0	20.0	WR	HAPLOPAPPUS	SHAFT	
720628	163000.0	72048	USA	NTS	DOE	37.000	-116.000	0.0	0.0	0.000	0.0	20.0	WR	TAJIQUE	SHAFT	
720630	0.0	72013	FRANCE	MURUROA	DOE	-22.000	-139.000	0.0	0.0	0.000	0.0	20.0	WR	TITANIA	BALLOON	
720706	10257.7	72014	USSR	SEMI KAZAKH	UGS	49.700	78.000	4.4	0.0	0.000	0.001	20.0	WE		TUNNEL	
720709	70000.0	72015	USSR	UKRAINE	DOE	0.000	0.000	0.0	0.0	0.000	3.8	3.8	PNE	FAKEL	SHAFT	
720720	171600.0	72016	USA	NTS	UGS	37.215	-116.183	5.0	0.0	0.000	0.0	20.0	WE	DIAMOND SCULLS	TUNNEL	
720725	133001.0	72040	USA	NTS	DIS	37.020	-116.030	0.0	0.0	0.000	0.0	20.0	WR	ATARQUE	SHAFT	
720727	0.0	72017	FRANCE	MURUROA	DOE	-22.000	-139.000	0.0	0.0	0.000	0.0	20.0	WR	OBERON	BALLOON	
720727	0.0	72054	USSR	NZ RUSS	MTM	71.000	54.000	0.0	0.0	0.000	0.001	20.0	FMS		SHAFT	
720731	0.0	72018	FRANCE	MURUROA	SPA	-22.000	-139.000	0.0	0.0	0.000	0.0	0.0	SE	ARIEL	TOWER	
720809	0.0	72049	USA	NTS	DOE	37.000	-116.000	0.0	0.0	0.000	0.0	20.0	WR/SE	CEB/CUCH/SOL	SHAFT	F3x
720816	31657.2	72019	USSR	SEMI KAZAKH	UGS	49.800	78.100	5.2	0.0	0.000	8.0	8.0	WR		TUNNEL	
720820	25957.9	72020	USSR	KAZAKH	UGS	49.500	48.200	5.7	0.0	0.000	6.6	6.6	PNE	REGION	SHAFT	
720826	34656.9	72021	USSR	SEMI KAZAKH	UGS	50.000	77.000	5.5	0.0	0.000	0.001	20.0	WR		SHAFT	
720828	55956.5	72022	USSR	NZ RUSS	UGS	73.300	55.100	6.3	4.7	0.000	20.0	1500.0	WR		TUNNEL	
720902	85657.6	72023	USSR	SEMI KAZAKH	UGS	50.000	77.700	5.1	0.0	0.						

730710	12657.6	73015	USSR	SEMI KAZAKH	UGS	49.800	78.100	5.4	0.0	0.000	0.0	20.0	WR/SAM	TUNNEL	F3x
730721	180000.0	73016	FRANCE	MURUROA	DOE	-22.000	-139.000	0.0	0.0	0.000	0.0	20.0	WR	BALLOON	
730723	12257.8	73017	USSR	SEMI KAZAKH	UGS	50.000	78.900	6.3	4.7	0.000	150.0	1500.0	PNE	SHAFT	
730728	230300.0	73018	FRANCE	MURUROA	DOE	-22.000	-139.000	0.0	0.0	0.000	0.0	20.0	WR	BALLOON	
730815	15957.8	73019	USSR	KAZAKH	UGS	42.700	67.400	5.3	0.0	0.000	6.3	6.3	PNE	SHAFT	
730818	0.0	73020	FRANCE	MURUROA	DOE	-22.000	-139.000	0.0	0.0	0.000	0.0	20.0	WR	BALLOON	
730824	0.0	73021	FRANCE	MURUROA	DOE	-22.000	-139.000	0.0	0.0	0.000	0.0	20.0	WR	BALLOON	
730828	25957.6	73022	USSR	KAZAKH	UGS	50.500	68.400	5.3	0.0	0.000	6.3	6.3	PNE	SHAFT	
730828	0.0	73034	FRANCE	W MURUROA	DIS	-22.000	-140.000	0.0	0.0	0.000	0.0	20.0	WR	AIRDROP	
730912	65954.3	73023	USSR	NZ RUSS	UGS	73.300	55.200	6.8	5.0	0.000	150.0	10000.0	WR	TUNNEL	F4x
730913	0.0	73045	FRANCE	MURUROA	SPA	-22.000	-139.000	0.0	0.0	0.000	0.0	0.0	WR	TOWER	
730919	25957.2	73024	USSR	KAZAKH	UGS	45.600	67.800	5.2	0.0	0.000	6.3	6.3	PNE	SHAFT	
730920	0.0	73046	USSR	SEMI KAZAKH	MTM	50.000	78.000	0.0	0.0	0.000	0.0	0.001	WR	SHAFT	
730927	65958.0	73025	USSR	NZ RUSS	UGS	70.800	53.900	6.0	4.9	0.000	20.0	150.0	FMS	SHAFT	
730930	45957.5	73026	USSR	ORENBG RUSS	UGS	51.600	54.600	5.2	0.0	0.000	10.0	10.0	PNE	SHAFT	
731002	0.0	73040	USA	NTS	DOE	37.000	-116.000	0.0	0.0	0.000	0.0	20.0	WR	SHAFT	
731002	0.0	73041	USA	NTS	DOE	37.000	-116.000	0.0	0.0	0.000	0.0	20.0	WR	SHAFT	
731012	170000.8	73027	USA	NTS	UGS	37.200	-116.203	4.8	0.0	0.000	0.0	20.0	WE	TUNNEL	
731026	42057.7	73028	USSR	SEMI KAZAKH	UGS	49.800	78.200	5.3	4.4	0.000	0.001	20.0	WE	TUNNEL	
731026	55957.6	73029	USSR	BASHKIR RUSS	UGS	53.700	55.400	4.8	0.0	0.000	10.0	10.0	PNE	SHAFT	F
731027	65957.4	73030	USSR	NZ RUSS	UGS	70.800	54.200	6.9	5.5	0.000	1500.0	10000.0	WR	SHAFT	
731104	0.0	73047	USSR	SEMI KAZAKH	MTM	50.000	78.000	0.0	0.0	0.000	0.001	20.0	WR	SHAFT	
731128	153000.5	73031	USA	NTS	UGS	36.900	-116.000	4.4	0.0	0.000	0.0	20.0	WR	SHAFT	
731212	190007.0	73032	USA	NTS	DOE	37.060	-116.570	4.4	0.0	0.000	0.0	20.0	WR	SHAFT	
731213	0.0	73042	USA	NTS	DOE	37.000	-116.000	0.0	0.0	0.000	0.0	20.0	WR	SHAFT	
731214	74657.0	73033	USSR	SEMI KAZAKH	UGS	50.000	79.000	6.0	4.4	0.000	20.0	150.0	WR	SHAFT	
731219	0.0	73043	USA	NTS	DOE	37.000	-116.000	0.0	0.0	0.000	0.0	20.0	WR	SHAFT	
731219	0.0	73044	USA	NTS	DOE	37.000	-116.000	0.0	0.0	0.000	0.0	20.0	SE	SHAFT	
731231	0.0	73048	USSR	SEMI KAZAKH	MTM	50.000	78.000	0.0	0.0	0.000	0.001	20.0	WR	TUNNEL	
740110	0.0	74044	USA	NTS	DOE	37.000	-116.000	0.0	0.0	0.000	0.0	20.0	WR	SHAFT	3x
740130	45657.6	74001	USSR	SEMI KAZAKH	UGS	49.900	78.000	4.6	0.0	0.000	0.0	20.0	WE	TUNNEL	3x
740227	170000.1	74003	USA	NTS	UGS	37.104	-116.053	5.8	0.0	0.000	20.0	200.0	WR	SHAFT	
740228	0.0	74054	USSR	SEMI KAZAKH	MTM	50.000	78.000	0.0	0.0	0.000	0.0	0.001	SAM	TUNNEL	
740314	0.0	74045	USA	NTS	DOE	37.000	-116.000	0.0	0.0	0.000	0.0	20.0	WR	SHAFT	
740412	0.0	74046	USA	NTS	DOE	37.000	-116.000	0.0	0.0	0.000	0.0	20.0	WR	SHAFT	
740416	55300.0	74005	USSR	SEMI KAZAKH	DOE	50.000	78.000	0.0	0.0	0.000	0.001	20.0	WR	SHAFT	
740423	0.0	74047	USA	NTS	DOE	37.000	-116.000	0.0	0.0	0.000	0.0	20.0	WR	SHAFT	
740501	0.0	74048	USA	NTS	DOE	37.000	-116.000	0.0	0.0	0.000	0.0	20.0	WR	SHAFT	
740508	0.0	74049	USA	NTS	DOE	37.000	-116.000	0.0	0.0	0.000	0.0	20.0	WR	SHAFT	
740516	30257.3	74006	USSR	SEMI KAZAKH	UGS	49.743	78.150	5.3	0.0	0.000	0.001	20.0	WR	SHAFT	
740518	23455.3	74007	INDIA	POKHRAN	UGS	26.900	71.700	5.0	0.0	0.000	0.0	20.0	PNE	TUNNEL	
740522	141459.9	74008	USA	NTS	ISC	37.060	-116.110	4.6	0.0	0.000	0.0	20.0	WR	SHAFT	
740523	133830.2	74009	UK	NTS	UGS	37.100	-116.100	4.8	0.0	0.000	0.0	20.0	WR	SHAFT	
740531	32657.4	74010	USSR	SEMI KAZAKH	UGS	49.952	78.844	5.9	0.0	0.000	20.0	150.0	PNE	SHAFT	
740606	144000.5	74011	USA	NTS	ISC	36.960	-116.020	0.0	0.0	0.000	0.0	20.0	WR	SHAFT	
740616	0.0	74012	FRANCE	MURUROA	WTN	-22.000	-139.000	0.0	0.0	0.000	0.0	20.0	WR	BALLOON	
740617	60000.0	74013	CHINA	LOP NOR	DOE	39.500	89.400	4.6	4.3	0.000	200.0	1000.0	WR	ATMOSPH	
740619	155959.9	74014	USA	NTS	UGS	37.200	-116.200	5.0	0.0	0.000	0.0	20.0	WE	TUNNEL	
740625	35657.6	74015	USSR	SEMI KAZAKH	UGS	49.889	78.115	4.7	0.0	0.000	0.001	20.0	WE	TUNNEL	
740701	0.0	74055	FRANCE	MURUROA	SPA	-22.000	-139.000	0.0	0.0	0.000	0.0	0.0	SE	TOWER	
740707	0.0	74016	FRANCE	MURUROA	WTN	-22.000	-139.000	0.0	0.0	0.000	0.0	1000.0	WR	BALLOON	F
740708	60001.7	74017	USSR	BASHKIR RUSS	UGS	53.800	55.200	0.0	0.0	0.000	10.0	10.0	PNE	SHAFT	
740710	25657.5	74018	USSR	SEMI KAZAKH	UGS	49.789	78.139	5.3	0.0	0.000	0.001	20.0	WR	SHAFT	
740710	160000.1	74019	USA	NTS	UGS	37.068	-116.032	5.7	0.0	0.000	20.0	200.0	WR	SHAFT	
740717	0.0	74020	FRANCE	MURUROA	WTN	-22.000	-139.000	0.0	0.0	0.000	0.0	20.0	WR	BALLOON	
740718	140001.2	74021	USA	NTS	ISC	37.090	-116.050	0.0	0.0	0.000	0.0	20.0	WR	SHAFT	2x
740725	0.0	74023	FRANCE	WSW MURUROA	WTN	-22.000	-139.000	0.0	0.0	0.000	0.0	20.0	WR	AIRDROP	
740728	0.0	74056	FRANCE	MURUROA	SPA	-22.000	-139.000	0.0	0.0	0.000	0.0	0.0	SE	TOWER	
740729	000000.0	74059	USSR	SEMI KAZAKH	MTM	50.000	78.000	0.0	0.0	0.000	0.001	20.0	WR	SHAFT	
740814	140000.1	74024	USA	NTS	UGS	37.023	-116.034	4.6	0.0	0.000	0.0	20.0	WR	SHAFT	
740814	145958.3	74025	USSR	TYUMEN RUSS	UGS	68.913	75.899	5.5	0.0	0.000	7.6	7.6	PNE	SHAFT	
740815	0.0	74026	FRANCE	MURUROA	WTN	-22.000	-139.000	0.0	0.0	0.000	0.0	20.0	WR	BALLOON	
740824	0.0	74044	FRANCE	MURUROA	WTN	-22.000	-139.000	0.0	0.0	0.000	0.0	20.0	WR	BALLOON	
740829	95955.6	74028	USSR	NZ RUSS	UGS	73.366	55.094	6.4	5.0	0.000	0.001	1500.0	WR	TUNNEL	F5x
740829	145959.2	74029	USSR	KOMI RUSS	UGS	67.233	62.119	5.2	0.0	0.000	7.6	7.6	PNE	SHAFT	
740830	150000.2	74030	USA	NTS	UGS	37.150	-116.083	5.8	0.0	0.000	20.0	20.0	WR	SHAFT	
740913	30257.8	74031	USSR	SEMI KAZAKH	UGS	49.820	78.091	5.2	0.0	0.000	0.001	20.0	WE	TUNNEL	
740914	0.0	74032	FRANCE	MURUROA	WTN	-22.000	-139.000	0.0	0.0	0.000	0.0	1000.0	WR	BALLOON	
740925	135959.3	74033	USA	NTS	ISC	36.990	-115.890	4.4	0.0	0.000	0.0	20.0	WR	SHAFT	
740926	150500.2	74034	USA	NTS	UGS	37.133	-116.068	5.6	4.2	0.000	20.0	200.0	WR	SHAFT	
740926	0.0	74050	USA	NTS	DOE	37.000	-116.000	0.0	0.0	0.000	0.0	20.0	WR	SHAFT	
741002	0.0	74057	USSR	JAKUTS RUSS	MTM	0.000	0.000	0.0	0.0	0.000	1.7	1.7	PNE	SHAFT	
741016	63257.5	74035	USSR	SEMI KAZAKH	UGS	49.972	78.960	5.5	0.0	0.000	0.001	20.0	WE	SHAFT	
741017	0.0	74051	USA	NTS	DOE	37.000	-116.000	0.0	0.0	0.000	0.0	20.0	WR	SHAFT	
741028	0.0	74036	USA	NTS	DOE	37.000	-116.000	0.0	0.0	0.000	0.0	20.0	WE	TUNNEL	
741102	45956.7	74037	USSR	NZ RUSS	UGS	70.817	54.063	6.7	5.3	0.000	1500.0	10000.0	WR	SHAFT	
741102	0.0	74052	USA	NTS	DOE	37.000	-116.000	0.0	0.0	0.000	0.0	20.0	WR	SHAFT	
741126	0.0	74053	USA	NTS	DOE	37.000	-116.000	0.0	0.0	0.000	0.0	20.0	SE	SHAFT	
741128	0.0	74058	USSR	SEMI KAZAKH	MTM	50.000	78.000	0.0	0.0	0.000	0.001	20.0	WR	SHAFT	
741207	55959.6	74039	USSR	SEMI KAZAKH	UGS	49.908	77.648	4.7	0.0	0.000	1.7	1.7	PNE	SHAFT	
741216	62302.4	74040	USSR	SEMI KAZAKH	UGS	49.755	78.064	5.0	0.0	0.000	0.001	20.0	WR	TUNNEL	
741216	64102.4	74041	USSR	SEMI KAZAKH	UGS	49.824	78.117	4.8	0.0	0.000	3.8	3.8	PNE	TUNNEL	
741216	133004.2	74042	USA	NTS	ISC	37.110	-116.320	4.3	0.0	0.000	0.0	20.0	WR	SHAFT	
741227	54656.8	74043	USSR	SEMI KAZAKH	UGS	49.960	79.046	5.6	4.7	0.000	20.0	150.0	WR	SHAFT	
750206	0.0	75036	USA	NTS	DOE	37.000	-116.000	0.0	0.0	0.000	0.0	20.0	WR	SHAFT	2x
750206	0.0	75037	USA	NTS	DOE	37.000	-116.000	0.0	0.0	0.000	0.0	20.0	WR	SHAFT	
750219	0.0	75038	USA	NTS	DOE	37.000	-116.000	0.0	0.0	0.000	0.0				

751029	44657.3	75028	USSR	SEMI KAZAKH	ISC	49.920	78.910	5.8	0.0	0.000	20.0	150.0	WR		SHAFT
751118	153000.4	75029	USA	NTS	ISC	36.990	-116.040	4.4	0.0	0.000	0.0	20.0	WR	DECK	SHAFT
751120	150000.1	75030	USA	NTS	ISC	37.220	-116.370	6.0	0.0	0.817	200.0	1000.0	WR	INLET	SHAFT
751126	4800.0	75031	FRANCE	FANGATAUFA	WTN	-22.000	-139.000	4.9	0.0	0.000	0.0	20.0	WR	HECTOR	SHAFT/GR
751126	153000.2	75032	USA	NTS	ISC	37.120	-116.020	5.0	0.0	0.320	0.0	20.0	WR	LEYDEN	SHAFT
751213	45657.5	75033	USSR	SEMI KAZAKH	ISC	49.810	78.240	5.1	0.0	0.000	0.001	20.0	WR		TUNNEL
751220	200000.2	75034	USA	NTS	ISC	37.120	-116.060	5.7	4.0	0.716	20.0	200.0	WR	CHIBERTA	SHAFT
751225	51657.2	75035	USSR	SEMI KAZAKH	ISC	50.020	78.860	5.7	5.2	0.000	20.0	150.0	WR		SHAFT
760103	191500.2	76001	USA	NTS	ISC	37.300	-116.330	6.2	5.5	1.451	200.0	1000.0	WR	MUENSTER	SHAFT
760115	44657.3	76002	USSR	SEMI KAZAKH	ISC	49.800	78.250	5.2	0.0	0.000	0.001	20.0	WR		TUNNEL
760123	60000.0	76003	CHINA	LOP NOR	DOE	41.500	89.000	0.0	0.0	0.000	0.0	20.0	WR		ATMOSPH
760204	142000.1	76004	USA	NTS	ISC	37.070	-116.030	5.6	0.0	0.640	20.0	200.0	WR	KEELSON	SHAFT
760204	144000.2	76005	USA	NTS	ISC	37.110	-116.040	5.6	0.0	0.655	20.0	200.0	WR	ESROM	SHAFT
760212	144500.2	76006	USA	NTS	UGS	37.271	-116.488	6.3	5.5	1.219	200.0	1000.0	WR	FONTINA	SHAFT
760214	113000.2	76007	USA	NTS	ISC	37.240	-116.420	5.8	0.0	1.167	200.0	500.0	WR	CHESHIRE	SHAFT
760226	0.0	76042	USA	NTS	DOE	37.000	-116.000	0.0	0.0	0.000	0.0	20.0	WR	SHALLOWS	SHAFT
760309	140000.1	76008	USA	NTS	ISC	37.310	-116.360	5.8	0.0	0.869	200.0	500.0	WR	ESTUARY	SHAFT
760314	123000.2	76009	USA	NTS	ISC	37.310	-116.470	6.2	5.3	1.237	500.0	1000.0	WR	COLBY	SHAFT
760317	141500.1	76010	USA	NTS	ISC	37.260	-116.310	6.0	4.5	0.879	200.0	500.0	WR	POOL	SHAFT
760317	144500.1	76011	USA	NTS	ISC	37.110	-116.050	5.8	4.2	0.780	200.0	500.0	WR	STRAIT	SHAFT
760317	0.0	76047	USSR	SEMI KAZAKH	MTM	50.000	78.000	0.0	0.0	0.000	0.001	20.0	WR		TUNNEL
760329	0.0	76049	USSR	AZGIR KAZAKH	MTM	48.000	47.000	0.0	0.0	0.000	0.0	10.0	PNE		SHAFT
760403	4500.0	76012	FRANCE	MURUROA	HFS	-22.000	-139.000	0.0	0.0	0.000	0.0	5.0	WR	PATROCOLE	SHAFT/GR
760410	0.0	76048	USSR	SEMI KAZAKH	MTM	50.000	78.000	0.0	0.0	0.000	0.001	20.0	WR		TUNNEL
760421	45757.9	76013	USSR	SEMI KAZAKH	ISC	49.840	78.180	5.1	0.0	0.000	0.001	20.0	WR		SHAFT
760421	50257.3	76014	USSR	SEMI KAZAKH	ISC	49.890	78.830	5.3	0.0	0.000	0.001	20.0	WR		TUNNEL
760512	195001.9	76015	USA	NTS	ISC	37.190	-116.250	4.7	0.0	0.000	0.0	20.0	WE	MIGHTY EPIC	TUNNEL
760519	126568.0	76016	USSR	SEMI KAZAKH	ISC	49.840	77.970	5.0	0.0	0.000	0.001	20.0	WR		TUNNEL
760520	0.0	76043	USA	NTS	DOE	37.000	-116.000	0.0	0.0	0.000	0.0	20.0	WR	RIVOLI	SHAFT
760609	30257.5	76017	USSR	SEMI KAZAKH	ISC	49.980	79.070	5.3	0.0	0.000	0.001	20.0	WR		SHAFT
760704	25657.5	76018	USSR	SEMI KAZAKH	ISC	49.850	78.970	5.8	0.0	0.000	20.0	150.0	WR		SHAFT
760711	2957.8	76019	FRANCE	MURUROA	ISC	-22.100	-138.700	5.0	0.0	0.000	0.0	20.0	WR	MENELAS	SHAFT/GR
760722	0.0	76021	FRANCE	MURUROA	HFS	-22.000	-139.000	0.0	0.0	0.000	0.0	0.0	SE	CALYPSO	SHAFT/GR
760723	23528.0	76020	USSR	SEMI KAZAKH	ISC	49.800	78.080	5.1	0.0	0.000	0.001	20.0	WR		TUNNEL
760727	203000.1	76022	USA	NTS	ISC	37.070	-116.040	5.3	0.0	0.000	20.0	150.0	WR	BILLET	SHAFT
760729	45958.0	76023	USSR	AZGIR KAZAKH	ISC	47.810	48.100	5.9	4.4	0.000	58.0	58.0	PNE		SHAFT
760804	25658.8	76024	USSR	SEMI KAZAKH	HFS	-22.000	-139.000	0.0	0.0	0.000	0.001	20.0	WR		SHAFT
760826	143000.2	76025	UK	NTS	ISC	37.130	-116.080	5.3	4.2	0.000	20.0	150.0	WR	BANON	SHAFT
760828	25657.6	76026	USSR	SEMI KAZAKH	ISC	49.950	78.980	5.8	0.0	0.000	20.0	150.0	WR		SHAFT
760926	60000.0	76027	CHINA	LOP NOR	DOE	41.500	89.000	0.0	0.0	0.000	20.0	200.0	WR		ATMOSPH
760929	25957.7	76028	USSR	NZ RUSS	ISC	73.410	54.500	5.8	0.0	0.000	20.0	150.0	WR		TUNNEL
761006	0.0	76044	USA	NTS	DOE	37.000	-116.000	0.0	0.0	0.000	0.0	20.0	WR	GOUDA	SHAFT
761017	50003.8	76029	CHINA	LOP NOR	ISC	41.640	88.210	4.9	0.0	0.000	10.0	20.0	WR		UG
761020	75957.8	76030	USSR	NZ RUSS	ISC	73.400	54.470	5.1	0.0	0.000	0.0	20.0	WR/F/SA		TUNNEL
761030	45702.5	76031	USSR	SEMI KAZAKH	ISC	49.980	78.200	4.9	0.0	0.000	0.001	20.0	WE		TUNNEL
761030	0.0	76050	FRANCE	MURUROA	SPA	-22.000	-138.000	0.0	0.0	0.000	0.0	5.0	WR	ULYSSE A	SHAFT/GR
761105	35956.9	76032	USSR	JAKUTS RUSS	ISC	61.520	112.730	5.3	0.0	0.000	15.0	15.0	PNE	OKA	SHAFT
761110	0.0	76045	USA	NTS	DOE	37.000	-116.000	0.0	0.0	0.000	0.0	20.0	WR	SPRIT	SHAFT
761117	60017.6	76033	CHINA	LOP NOR	ISC	40.780	89.660	4.6	0.0	0.000	2000.0	8000.0	WR		AIRDROP
761123	50257.5	76034	USSR	SEMI KAZAKH	ISC	49.970	79.010	5.8	0.0	0.000	20.0	150.0	WR		SHAFT
761123	151459.8	76035	USA	NTS	ISC	37.130	-116.080	0.0	0.0	0.317	0.0	20.0	WR	CHEVRE	SHAFT
761205	0.0	76037	FRANCE	MURUROA	HFS	-22.000	-139.000	0.0	0.0	0.000	0.0	5.0	WR	ASTYANAX	SHAFT/GR
761207	45657.5	76036	USSR	SEMI KAZAKH	ISC	49.870	78.890	5.9	0.0	0.000	0.001	150.0	WR		SHAFT
761207	0.0	76051	USSR	SEMI KAZAKH	MTM	50.000	78.000	0.0	0.0	0.000	0.001	20.0	WR		SHAFT
761208	144930.1	76038	USA	NTS	ISC	37.080	-116.000	4.9	0.0	0.427	0.0	20.0	WR	REDMUD	SHAFT
761221	150900.2	76039	USA	NTS	ISC	37.120	-116.070	0.0	0.0	0.331	0.0	20.0	WR	ASIAGO	SHAFT
761221	0.0	76046	USA	NTS	DOE	37.000	-116.000	0.0	0.0	0.000	0.0	20.0	WR	SUTTER	SHAFT
761228	180000.1	76040	USA	NTS	ISC	37.100	-116.040	5.5	0.0	0.640	20.0	150.0	WR	RUDDER	SHAFT
761230	35657.0	76041	USSR	SEMI KAZAKH	ISC	49.800	78.150	5.2	4.2	0.000	0.001	20.0	WR		TUNNEL
770216	0.0	77038	USA	NTS	DOE	37.000	-116.000	0.0	0.0	0.000	0.0	20.0	WR	COVE/OARLOCK	SHAFT
770219	232957.7	77001	FRANCE	MURUROA	ISC	-22.140	-138.720	5.2	0.0	0.000	0.0	20.0	WR	ULYSSE B	SHAFT/GR
770308	0.0	77039	USA	NTS	DOE	37.000	-116.000	0.0	0.0	0.000	0.0	20.0	WR	DOFINO/-LAWTON	SHAFT
770319	230058.4	77002	FRANCE	MURUROA	ISC	-21.890	-138.960	5.8	0.0	0.000	0.0	150.0	WR	NESTOR	SHAFT/GR
770329	35657.8	77003	USSR	SEMI KAZAKH	ISC	49.790	78.150	5.4	0.0	0.000	20.0	150.0	WR		SHAFT
770329	0.0	77046	USSR	SEMI KAZAKH	MTM	50.000	78.000	0.0	0.0	0.000	0.0	20.0	WR/SAM		TUNNEL
770402	0.0	77047	FRANCE	MURUROA	SPA	-22.000	-139.000	0.0	0.0	0.000	0.0	5.0	WR	OEDIPE	SHAFT/GR
770405	150000.2	77004	USA	NTS	UGS	37.120	-116.062	5.6	5.3	0.690	20.0	150.0	WR	MARSILLY	SHAFT
770425	40658.0	77005	USSR	SEMI KAZAKH	ISC	49.850	78.160	5.1	0.0	0.000	0.001	20.0	WR		TUNNEL
770427	150000.1	77006	USA	NTS	ISC	37.090	-116.030	5.4	4.2	0.594	20.0	150.0	WR	BULKHEAD	SHAFT
770525	165959.3	77007	USA	NTS	ISC	37.100	-116.060	5.3	0.0	0.564	20.0	150.0	WR	CREWLINE	SHAFT
770529	25657.7	77008	USSR	SEMI KAZAKH	ISC	49.860	78.840	5.8	0.0	0.000	20.0	150.0	WR		SHAFT
770602	0.0	77040	USA	NTS	DOE	37.000	-116.000	0.0	0.0	0.000	0.0	20.0	WR	FOREFOOT	SHAFT
770628	0.0	77048	FRANCE	MURUROA	SPA	-22.000	-139.000	0.0	0.0	0.000	0.0	0.0	SE	ANDROMAQUE	SHAFT/GR
770629	30657.8	77009	USSR	SEMI KAZAKH	ISC	49.960	78.910	5.3	5.2	0.000	0.001	20.0	WR		SHAFT
770706	225955.1	77010	FRANCE	MURUROA	ISC	-22.400	-139.000	5.2	0.0	0.000	0.0	20.0	WR	AJAX	SHAFT/GR
770712	0.0	77049	FRANCE	MURUROA	SPA	-22.000	-139.000	0.0	0.0	0.000	0.0	0.0	SE	CLYTEMNESTRE	SHAFT/GR
770726	165957.8	77011	USSR	KRASNO RUSS	ISC	69.540	90.510	5.0	0.0	0.000	15.0	15.0	PNE	METEORIT	SHAFT
770728	0.0	77041	USA	NTS	DOE	37.000	-116.000	0.0	0.0	0.000	0.0	20.0	WR	CARNELIAN	SHAFT
770730	15657.8	77012	USSR	SEMI KAZAKH	ISC	49.730	78.090	5.1	0.0	0.000	0.001	20.0	WR		TUNNEL
770804	164000.1	77013	USA	NTS	ISC	37.090	-116.010	5.0	5.7	0.518	20.0	150.0	WR	STRAKE	SHAFT
770811	220200.3	77014	USSR	CHITA RUSS	ISC	50.950	110.780	5.2	0.0	0.000	8.5	8.5	PNE	METEORIT	SHAFT
770816	0.0	77042	USA	NTS	DOE	37.000	-116.000	0.0	0.0	0.000	0.0	20.0	WR	FLOTOS	SHAFT
770816	0.0	77043	USA	NTS	DOE	37.000	-116.000	0.0	0.0	0.000	0.0	20.0	WR	GRUYERE/-G	SHAFT
770817	42657.9	77015	USSR	SEMI KAZAKH	ISC	49.820	78.140	5.0	0.0	0.000	0.001	20.0	WR		TUNNEL
770819	175500.1	77016	USA	NTS	ISC	37.110	-116.050	5.6	0.0	0.701	20.0	150.0	WR	SCANTLING	

780323	163000.2	78007	USA	NTS	ISC	37.100	-116.050	5.6	0.0	0.640	20.0	150.0	WR	ICEBERG	SHAFT	
780323	0.0	78056	USA	NTS	DOE	37.000	-116.000	0.0	0.0	0.000	0.0	20.0	WR	TOPMAST	SHAFT	
780325	0.0	78059	FRANCE	MURUROA	SPA	-22.000	-139.000	0.0	0.0	0.000	0.0	5.0	WR	HECUBE	SHAFT/GR	
780326	35657.7	78008	USSR	SEMI KAZAKH	ISC	49.710	78.060	5.6	0.0	0.000	0.001	20.0	WR	TUNNEL	2x	
780411	153000.2	78009	UK	NTS	ISC	37.300	-116.330	5.3	0.0	0.633	20.0	150.0	WR	FONDUTTA	SHAFT	
780411	174500.1	78010	USA	NTS	ISC	37.230	-116.370	5.0	4.5	0.611	20.0	150.0	WR	BACKBEACH	SHAFT	
780422	30657.7	78011	USSR	SEMI KAZAKH	ISC	49.720	78.180	5.2	3.6	0.000	0.001	20.0	WR	TUNNEL	3x	
780425	0.0	78057	USA	NTS	DOE	37.000	-116.000	0.0	0.0	0.000	0.0	20.0	SE	ASCO	SHAFT	
780510	0.0	78060	USA	NTS	DOE	37.000	-116.000	0.0	0.0	0.000	0.0	0.0	WR	TRANSOM	SHAFT	F
780524	0.0	78061	USSR	SEMI KAZAKH	MTM	50.000	78.000	0.0	0.0	0.000	0.0	0.001	SAM	TUNNEL		
780529	45657.6	78012	USSR	SEMI KAZAKH	ISC	49.890	78.200	4.7	0.0	0.000	0.001	20.0	WE	TUNNEL		
780601	170000.0	78013	USA	NTS	UGS	37.034	-116.037	0.0	0.0	0.000	0.0	20.0	WR	JACKPOTS	SHAFT	
780602	0.0	78062	USSR	SEMI KAZAKH	MTM	50.000	78.000	0.0	0.0	0.000	0.0	0.001	SAM	TUNNEL		
780611	25657.8	78014	USSR	SEMI KAZAKH	ISC	49.880	78.810	5.9	4.4	0.000	20.0	150.0	WR			
780701	0.0	78063	FRANCE	MURUROA	SPA	-22.000	-139.000	0.0	0.0	0.000	0.0	20.0	WR			
780705	24657.5	78015	USSR	SEMI KAZAKH	ISC	49.840	78.910	5.8	3.7	0.000	20.0	150.0	WR			
780707	135959.3	78016	USA	NTS	UGS	37.100	-116.010	4.0	0.0	0.000	0.0	20.0	WR	SATZ	SHAFT	
780712	170000.1	78017	USA	NTS	ISC	37.080	-116.040	5.6	4.1	0.564	20.0	150.0	WR	LOWBALL	SHAFT	
780719	180000.0	78018	FRANCE	MURUROA	WTN	-22.000	-139.000	0.0	0.0	0.000	0.0	5.0	WR	ARES	SHAFT/GR	
780726	230000.0	78019	FRANCE	MURUROA	WTN	-22.000	-139.000	4.9	0.0	0.000	0.0	5.0	WR	IDOMENEE	SHAFT/GR	
780728	24657.8	78020	USSR	SEMI KAZAKH	ISC	49.730	78.150	5.7	0.0	0.000	0.001	150.0	WR			
780809	175958.1	78021	USSR	JAKUTS RUSS	ISC	63.650	125.340	5.6	3.8	0.000	22.0	22.0	PNE	KRATON	SHAFT	
780810	75957.7	78022	USSR	NZ RUSS	ISC	73.310	54.700	5.9	4.3	0.000	0.001	150.0	WR/FMS	TUNNEL	F6x	
780824	180004.0	78023	USSR	JAKUTS RUSS	ISC	65.870	112.560	5.1	3.7	0.000	22.0	22.0	PNE	KRATON	SHAFT	
780829	23658.0	78024	USSR	SEMI KAZAKH	ISC	49.820	78.100	5.2	0.0	0.000	0.0	20.0	WR/SAM	TUNNEL	F3x	
780829	23706.4	78025	USSR	SEMI KAZAKH	ISC	49.980	79.020	5.9	4.0	0.000	20.0	150.0	WR			
780831	140000.2	78026	USA	NTS	ISC	37.270	-116.360	5.6	0.0	0.681	20.0	150.0	WR	PANIR	SHAFT	
780912	0.0	78064	USSR	AZGIR KAZAKH	MTM	48.000	47.000	0.0	0.0	0.000	0.08	0.08	PNE			
780913	151500.2	78027	USA	NTS	ISC	37.210	-116.210	4.6	0.0	0.388	0.0	20.0	WE	DIABLOHAWK	TUNNEL	
780915	23657.5	78028	USSR	SEMI KAZAKH	ISC	49.910	78.940	6.0	4.4	0.000	20.0	150.0	WR			
780920	50257.9	78029	USSR	SEMI KAZAKH	ISC	49.890	78.400	4.3	0.0	0.000	0.001	20.0	WE			
780921	145957.6	78030	USSR	KRASNO RUSS	ISC	66.530	86.260	5.2	0.0	0.000	15.0	15.0	PNE	KRATON	TUNNEL	
780927	20458.4	78031	USSR	NZ RUSS	ISC	73.380	54.440	5.6	4.4	0.000	0.0	150.0	WR/SAM	TUNNEL	F7x	
780927	170000.0	78032	USA	NTS	ISC	37.080	-116.050	5.0	0.0	0.442	20.0	150.0	WR	DRAUGHTS	SHAFT	
780927	172000.0	78033	USA	NTS	ISC	37.070	-116.020	5.7	4.1	0.640	20.0	150.0	WR	RUMMY	SHAFT	
780927	0.0	78058	USA	NTS	DOE	37.000	-116.000	0.0	0.0	0.000	0.0	20.0	WR	CREMINO	SHAFT	F2x
781007	235957.0	78034	USSR	JAKUTS RUSS	ISC	61.530	112.870	5.2	0.0	0.000	15.0	15.0	PNE	VYATKA	TUNNEL	
781014	10002.3	78035	CHINA	LOP NOR	ISC	41.420	88.660	4.9	0.0	0.000	0.0	20.0	WR	UG		
781015	53657.5	78036	USSR	SEMI KAZAKH	ISC	49.720	78.210	5.2	0.0	0.000	0.001	20.0	WE			
781017	45956.6	78037	USSR	AZGIR KAZAKH	ISC	47.810	48.090	5.8	4.5	0.000	0.001	150.0	PNE			
781017	135958.0	78038	USSR	TYUMEN RUSS	ISC	63.210	63.260	5.5	3.7	0.000	22.0	22.0	PNE	KRATON	SHAFT	F2x
781031	41657.8	78039	USSR	SEMI KAZAKH	ISC	49.760	78.120	5.2	0.0	0.000	0.001	20.0	FMS			
781102	152500.2	78040	USA	NTS	ISC	37.290	-116.300	4.2	0.0	0.576	0.0	20.0	WR	EMMENTHAL	SHAFT	
781102	180000.0	78041	FRANCE	MURUROA	WTN	-22.000	-139.000	0.0	0.0	0.000	0.0	150.0	WR	SCHEDIOS	SHAFT/GR	
781104	50557.5	78042	USSR	SEMI KAZAKH	ISC	50.030	78.980	5.6	4.2	0.000	0.001	150.0	WR			
781114	0.0	78065	FRANCE	MURUROA	SPA	-22.000	-139.000	0.0	0.0	0.000	0.0	0.0	SE	APHRODITE	SHAFT/GR	
781118	190000.0	78043	UK	NTS	ISC	37.130	-116.080	5.2	0.0	0.542	20.0	150.0	WR	QUARGEL	SHAFT	
781129	43258.1	78044	USSR	SEMI KAZAKH	ISC	49.860	78.050	5.3	0.0	0.000	0.001	150.0	WR			
781129	43302.9	78045	USSR	SEMI KAZAKH	ISC	49.930	78.770	6.0	4.3	0.000	0.001	20.0	WR			
781130	173158.6	78046	FRANCE	MURUROA	ISC	-21.850	-139.000	5.8	4.0	0.000	0.0	20.0	WR	PRIAM	SHAFT/GR	
781130	0.0	78066	USSR	AZGIR KAZAKH	MTM	48.000	47.000	0.0	0.0	0.000	0.06	0.06	PNE			
781201	170729.8	78047	USA	NTS	ISC	37.010	-116.040	0.0	0.0	0.000	0.0	20.0	WR	CONCENTRATION	SHAFT	
781214	44257.6	78048	USSR	SEMI KAZAKH	ISC	49.920	78.200	4.8	0.0	0.000	0.001	20.0	WR			
781214	0.0	78049	CHINA	LOP NOR	HFS	41.500	89.000	0.0	0.0	0.000	0.0	20.0	WR			
781216	153000.2	78050	USA	NTS	ISC	37.270	-116.410	5.5	0.0	0.689	20.0	150.0	WR	FARM	ATMOSPH	
781217	180400.0	78055	FRANCE	MURUROA	WTN	-22.000	-139.000	5.2	0.0	0.000	0.0	20.0	WR	ETEOCLE	SHAFT/GR	
781218	75956.3	78051	USSR	AZGIR KAZAKH	ISC	47.780	48.140	5.9	5.2	0.000	103.0	103.0	PNE			
781219	165658.5	78052	FRANCE	MURUROA	ISC	-21.900	-138.900	4.9	0.0	0.000	0.0	0.0	WR	EUMEE	SHAFT/GR	
781220	43257.2	78053	USSR	SEMI KAZAKH	ISC	49.900	78.220	4.7	0.0	0.000	0.001	20.0	WR			
790110	80000.0	79001	USSR	AZGIR	HFS	48.000	47.000	5.0	0.0	0.000	0.5	0.5	PNE			
790117	75955.8	79002	USSR	AZGIR	ISC	47.870	48.060	6.0	4.6	0.000	0.001	150.0	PNE			
790124	180000.1	79003	USA	NTS	ISC	37.100	-116.010	4.5	0.0	0.326	0.0	20.0	WR	BACCARAT	SHAFT	
790201	41257.8	79004	USSR	SEMI KAZAKH	ISC	50.080	78.880	5.4	0.0	0.000	0.001	20.0	WR			
790208	200000.1	79005	USA	NTS	ISC	37.100	-116.100	5.5	4.1	0.579	20.0	150.0	WR	QUINELLA	SHAFT	
790215	180500.2	79006	USA	NTS	ISC	37.200	-116.100	4.8	0.0	0.536	20.0	150.0	WR	KLOSTER	SHAFT	
790216	40358.2	79007	USSR	SEMI KAZAKH	ISC	49.970	77.740	5.4	0.0	0.000	0.001	20.0	WR			
790301	172400.0	79054	FRANCE	MURUROA	WTN	-22.000	-139.000	0.0	0.0	0.000	0.0	20.0	WR	PENTHESILEE	SHAFT/GR	
790309	163700.0	79008	FRANCE	MURUROA	WTN	-22.000	-139.000	0.0	0.0	0.000	0.0	20.0	WR	PHILOCTETE	SHAFT/GR	
790314	182959.5	79009	USA	NTS	ISC	37.020	-116.020	4.4	0.0	0.000	0.0	20.0	WR	MEMORY	SHAFT	
790323	0.0	79055	USSR	SEMI KAZAKH	MTM	50.000	78.000	0.0	0.0	0.000	0.0	0.001	SAM			
790324	162758.6	79010	FRANCE	MURUROA	ISC	-21.880	-139.040	4.9	0.0	0.000	0.0	20.0	WR	AGAPENOR	SHAFT/GR	
790404	180700.0	79011	FRANCE	MURUROA	WTN	-22.000	-139.000	0.0	0.0	0.000	0.0	20.0	WR	POLYDORE	SHAFT/GR	
790410	0.0	79056	USSR	SEMI KAZAKH	MTM	50.000	78.000	0.0	0.0	0.000	0.0	0.001	SAM			
790506	31657.6	79012	USSR	SEMI KAZAKH	ISC	49.800	78.120	5.2	0.0	0.000	0.001	20.0	WR			
790511	155959.8	79013	USA	NTS	ISC	36.960	-116.010	0.0	0.0	0.000	0.0	20.0	WR	FREEZEOUT	SHAFT	
790531	55457.6	79015	USSR	SEMI KAZAKH	ISC	49.840	78.190	5.2	0.0	0.000	0.001	20.0	SAM			
790611	140000.2	79016	USA	NTS	ISC	37.290	-116.460	5.5	4.4	0.681	20.0	150.0	WR	PEPATO	SHAFT	4x
790612	0.0	79057	USSR	SEMI KAZAKH	MTM	50.000	78.000	0.0	0.0	0.000	0.0	0.001	SAM			
790618	232658.3	79017	FRANCE	MURUROA	ISC	-22.060	-138.640	4.7	0.0	0.000	0.0	20.0	WR	PYRRHOS	SHAFT/GR	
790620	150013.5	79018	USA	NTS	ISC	37.110	-116.020	4.0	0.0	0.335	0.0	20.0	WR	CHESS	SHAFT	
790623	25659.0	79019	USSR	SEMI KAZAKH	ISC	49.890	78.920	6.2	4.4	0.000	20.0	150.0	WR			
790628	144400.2	79020	USA	NTS	ISC	37.140	-116.080	5.0	0.0	0.537	20.0	150.0	WR	FAJY	SHAFT	
790629	185558.9	79021	FRANCE	MURUROA	ISC	-21.810	-138.980	5.4	0.0	0.000	0.0	150.0	WR			

800308	153500.1	80004	USA	NTS	ISC	37.200	-116.100	3.9	0.0	0.271	0.0	20.0	WR	NORBO	SHAFT
800314	0.0	80051	USSR	SEMI KAZAKH	MTM	50.000	78.000	0.0	0.0	0.000	0.0	0.001	SAM	TUNNEL	
800323	193658.4	80005	FRANCE	MURUROA	ISC	-21.860	-138.970	5.7	0.0	0.000	0.0	150.0	WR	THEESE	SHAFT/GR
800401	193058.9	80006	FRANCE	MURUROA	ISC	-21.770	-138.880	5.1	0.0	0.000	0.0	20.0	WR	BOROS	SHAFT/GR
800403	140000.1	80007	USA	NTS	ISC	37.100	-116.100	4.7	0.0	0.417	20.0	150.0	WR	LIPTAUER	SHAFT
800404	53257.3	80008	USSR	SEMI KAZAKH	ISC	50.000	77.860	4.9	0.0	0.000	0.001	20.0	WR		SHAFT
800404	183257.8	80009	FRANCE	MURUROA	ISC	-22.100	-138.700	4.5	0.0	0.000	0.0	20.0	WR	PELOPS	SHAFT/GR
800410	40657.9	80010	USSR	SEMI KAZAKH	ISC	49.822	78.080	5.0	0.0	0.000	0.001	20.0	WR		TUNNEL 2x
800416	200000.1	80011	USA	NTS	ISC	37.100	-116.000	5.3	4.2	0.579	20.0	150.0	WR	PYRAMID	SHAFT
800425	35657.4	80012	USSR	SEMI KAZAKH	ISC	49.960	78.810	5.5	0.0	0.000	0.001	20.0	WR		SHAFT 2x
800426	170000.1	80013	UK	NTS	ISC	37.200	-116.400	5.4	4.2	0.633	20.0	150.0	WR	COWLICK	SHAFT
800502	184630.1	80014	USA	NTS	ISC	37.100	-116.000	4.4	0.0	0.351	0.0	20.0	WR	CANFIELD	SHAFT
800522	35657.8	80015	USSR	SEMI KAZAKH	ISC	49.750	78.110	5.5	0.0	0.000	0.001	20.0	WR		TUNNEL 3x
800522	130000.1	80016	USA	NTS	ISC	37.000	-116.000	0.0	0.0	0.335	0.0	20.0	WR	FLORA	SHAFT
800612	32657.7	80017	USSR	SEMI KAZAKH	ISC	49.950	79.050	5.6	0.0	0.000	20.0	150.0	WR		SHAFT
800612	171500.1	80018	USA	NTS	ISC	37.300	-116.500	5.6	0.0	0.645	20.0	150.0	WR	KASH	SHAFT
800616	182658.8	80019	FRANCE	MURUROA	ISC	-21.830	-139.000	5.4	0.0	0.000	0.0	150.0	WR	EURYPHYLE	SHAFT/GR
800616	0.0	80052	USSR	BASHKIR RUSS	MTM	0.000	0.000	0.0	0.0	0.000	3.2	3.2	PNE	BUTAN	SHAFT
800621	170100.0	80050	FRANCE	MURUROA	WTN	-22.000	-139.000	5.0	0.0	0.000	0.0	20.0	WR	ILUS	SHAFT/GR
800624	151000.1	80020	USA	NTS	ISC	37.000	-116.000	4.4	0.0	0.320	0.0	20.0	WE	HURONKING	SHAFT
800625	0.0	80053	USSR	BASHKI RUSS	MTM	0.000	0.000	0.0	0.0	0.000	3.2	3.2	PNE	BUTAN	SHAFT
800625	0.0	80054	USSR	SEMI KAZAKH	MTM	0.000	0.000	0.0	0.0	0.000	0.001	20.0	WR		TUNNEL
800629	23257.8	80021	USSR	SEMI KAZAKH	ISC	49.910	78.860	5.7	3.7	0.000	0.001	150.0	WR		SHAFT F3x
800706	172659.1	80022	FRANCE	MURUROA	ISC	-21.750	-139.000	4.6	0.0	0.000	0.0	20.0	WR	CHRYSES	SHAFT/GR
800709	0.0	80055	FRANCE	MURUROA	SPA	-22.000	-116.000	0.0	0.0	0.000	0.0	0.0	SE	LEDA	SHAFT/GR
800719	234658.5	80024	FRANCE	MURUROA	ISC	-21.860	-139.000	5.8	5.2	0.000	0.0	150.0	WR	ASTIOS	SHAFT/GR
800725	190500.1	80025	USA	NTS	ISC	37.300	-116.500	5.5	4.2	0.680	20.0	150.0	WR	TAFTI	SHAFT
800731	33258.0	80026	USSR	SEMI KAZAKH	ISC	49.810	78.140	5.3	0.0	0.000	0.001	20.0	WR		TUNNEL 2x
800731	181900.1	80027	USA	NTS	ISC	37.000	-116.000	4.3	0.0	0.366	0.0	20.0	WR	VERDELLO	SHAFT
800914	24239.3	80028	USSR	SEMI KAZAKH	ISC	49.940	78.860	6.2	4.2	0.000	20.0	150.0	WR		SHAFT
800925	62110.5	80030	USSR	SEMI KAZAKH	ISC	49.810	78.080	4.7	0.0	0.000	0.001	20.0	WE		TUNNEL
800925	144500.1	80031	USA	NTS	ISC	37.100	-116.000	4.6	0.0	0.381	20.0	150.0	WR	BONARDA	SHAFT
800925	152630.1	80032	USA	NTS	ISC	37.100	-116.100	0.0	0.0	0.424	107.0	107.0	WR	RIOLA	SHAFT
801008	55957.3	80035	USSR	ASTRAK RUSS	ISC	46.790	48.290	5.2	3.7	0.000	8.5	8.5	PNE	VEGA	SHAFT
801011	70957.2	80036	USSR	NZ RUSS	ISC	73.360	54.820	5.7	4.0	0.000	0.001	150.0	WR		TUNNEL F7x
801012	33414.3	80037	USSR	SEMI KAZAKH	ISC	49.940	79.100	5.9	4.2	0.000	20.0	150.0	WR		SHAFT 2x
801016	43028.9	80038	CHINA	LOP NOR	ISC	41.040	89.940	4.4	4.4	0.000	200.0	1000.0	WR		ATMOSPH F
801023	0.0	80056	USSR	SEMI KAZAKH	MTM	50.000	78.000	0.0	0.0	0.000	0.001	20.0	WR		TUNNEL
801024	191500.1	80039	UK	NTS	ISC	37.100	-116.000	4.4	0.0	0.427	0.0	20.0	WR	DUTCHESS	SHAFT
801031	180000.1	80040	USA	NTS	ISC	37.200	-116.200	4.7	0.0	0.390	0.0	20.0	WE	MINERSIRON	TUNNEL
801101	125958.0	80041	USSR	KRASNO RUSS	ISC	60.790	97.570	5.2	0.0	0.000	0.001	20.0	PNE	BATOLIT	SHAFT
801114	165000.1	80042	USA	NTS	ISC	37.100	-116.000	4.1	0.0	0.320	0.0	20.0	WR	DAUPHIN	SHAFT
801125	175300.0	80043	FRANCE	MURUROA	WTN	-22.000	-139.000	0.0	0.0	0.000	0.0	5.0	WR	LAETFE	SHAFT/GR
801203	173258.3	80044	FRANCE	MURUROA	ISC	-21.870	-138.960	5.6	0.0	0.000	0.0	150.0	WR	DIOMEDE	SHAFT/GR
801205	0.0	80057	USSR	SEMI KAZAKH	MTM	50.000	78.000	0.0	0.0	0.000	0.001	20.0	WR		TUNNEL
801205	0.0	80058	USSR	SEMI KAZAKH	MTM	50.000	78.000	0.0	0.0	0.000	0.001	20.0	WR		TUNNEL 3x
801210	65957.7	80045	USSR	TYUMEN RUSS	ISC	61.730	66.760	4.6	3.7	0.000	15.0	15.0	PNE	ANGARA	SHAFT
801214	34706.5	80046	USSR	SEMI KAZAKH	ISC	49.870	78.970	5.9	4.1	0.000	0.001	150.0	WR		SHAFT F3x
801217	151000.1	80047	UK	NTS	ISC	37.300	-116.300	5.1	0.0	0.573	20.0	150.0	WR	SERPA	SHAFT
801226	40707.4	80048	USSR	SEMI KAZAKH	ISC	49.980	78.010	4.5	0.0	0.000	0.001	20.0	WR		TUNNEL
801227	40908.5	80049	USSR	SEMI KAZAKH	ISC	50.010	79.030	5.9	0.0	0.000	0.001	150.0	WR		SHAFT F2x
810115	202500.1	81001	USA	NTS	ISC	37.100	-116.000	5.6	0.0	0.564	20.0	150.0	WR	BASEBALL	SHAFT
810205	180000.1	81002	USA	NTS	ISC	37.000	-116.000	0.0	0.0	0.354	0.0	20.0	WR	CLAIRETTE	SHAFT
810225	150000.8	81003	USA	NTS	ISC	37.200	-116.100	0.0	0.0	0.229	0.0	20.0	WR	SECO	SHAFT
810227	232800.0	81004	FRANCE	MURUROA	WTN	-22.000	-139.000	0.0	0.0	0.000	0.0	5.0	WR	BROTEAS	SHAFT/GR
810306	172700.0	81005	FRANCE	MURUROA	WTN	-22.000	-139.000	0.0	0.0	0.000	0.0	5.0	WR	TYRO	SHAFT/GR
810325	0.0	81050	USSR	SEMI KAZAKH	MTM	50.000	78.000	0.0	0.0	0.000	0.0	0.001	SAM		TUNNEL
810328	172259.7	81006	FRANCE	MURUROA	ISC	-21.670	-138.840	4.7	0.0	0.000	0.0	20.0	WR	IPHICLES	SHAFT/GR
810329	40350.1	81007	USSR	SEMI KAZAKH	ISC	49.980	79.020	5.6	0.0	0.000	0.001	20.0	WR/FMS		SHAFT F3x
810410	175659.0	81008	FRANCE	MURUROA	ISC	-21.800	-138.900	4.8	0.0	0.000	0.0	20.0	WR	CLYMENE	SHAFT/LG
810422	11711.4	81009	USSR	SEMI KAZAKH	ISC	49.870	78.900	6.0	4.7	0.000	0.001	20.0	WR		SHAFT F3x
810430	143500.0	81010	USA	NTS	ISC	37.200	-116.000	0.0	0.0	0.323	0.0	20.0	WR	VIDE	SHAFT
810525	45957.6	81011	USSR	ARKHAN RUSS	ISC	68.210	53.500	5.5	4.2	0.000	37.6	37.6	PNE	PIRIT	SHAFT
810527	35812.3	81012	USSR	SEMI KAZAKH	ISC	49.940	79.010	5.5	3.4	0.000	0.001	20.0	WR		SHAFT
810529	160000.0	81013	USA	NTS	UGS	37.102	-116.004	4.2	0.0	0.320	0.0	20.0	WR	ALIGOTE	SHAFT
810604	0.0	81014	USSR	SEMI KAZAKH	MTM	50.000	78.000	0.0	0.0	0.000	0.0	0.001	SAM		TUNNEL
810606	180000.0	81015	USA	NTS	ISC	37.300	-116.300	5.5	4.2	0.000	20.0	150.0	WR	HARZER	SHAFT
810630	15712.8	81016	USSR	SEMI KAZAKH	ISC	49.720	78.090	5.2	0.0	0.000	0.001	20.0	WR		TUNNEL 2x
810708	222257.9	81018	FRANCE	MURUROA	ISC	-22.180	-138.730	5.3	0.0	0.000	0.0	20.0	WR	LYNCEE	SHAFT/GR
810710	140000.0	81019	USA	NTS	ISC	37.100	-116.000	0.0	0.0	0.341	0.0	20.0	WR	NIZA	SHAFT
810711	171700.0	81020	FRANCE	MURUROA	WTN	-22.000	-139.000	0.0	0.0	0.000	0.0	5.0	WR	ERYX	SHAFT/GR
810716	150000.1	81021	USA	NTS	ISC	37.100	-116.000	0.0	0.0	0.204	0.0	20.0	WR	PINEAU	SHAFT
810717	23715.7	81022	USSR	SEMI KAZAKH	ISC	49.790	78.170	5.2	0.0	0.000	0.001	20.0	WR		TUNNEL
810718	174300.0	81023	FRANCE	MURUROA	WTN	-22.000	-139.000	0.0	0.0	0.000	0.0	5.0	WR	THERAS	SHAFT/GR
810803	183258.4	81024	FRANCE	MURUROA	ISC	-21.890	-138.880	5.3	0.0	0.000	0.0	150.0	WR	AGENOR	SHAFT/GR
810805	134100.0	81025	USA	NTS	ISC	37.200	-116.000	0.0	0.0	0.200	0.0	20.0	WR	HAVARTI	SHAFT
810814	22712.9	81026	USSR	SEMI KAZAKH	ISC	49.750	78.070	5.0	0.0	0.000	0.001	20.0	WR		TUNNEL 3x
810827	143100.0	81027	USA	NTS	ISC	37.200	-116.100	0.0	0.0	0.294	0.0	20.0	WR	ISLAY	SHAFT
810902	40004.0	81028	USSR	PERM RUSS	ISC	60.590	55.700	4.4	0.0	0.000	3.2	3.2	PNE	GELLY	SHAFT
810904	150000.1	81029	USA	NTS	ISC	37.100	-116.000	0.0	0.0	0.305	0.0	20.0	WR	TREBBIANO	SHAFT
810913	21718.4	81030	USSR	SEMI KAZAKH	ISC	49.890	78.980	6.1	4.9	0.000	20.0	150.0	WR		SHAFT
810924	150000.0	81031	USA	NTS	ISC	37.000	-116.000	0.0	0.0	0.213	0.0	20.0	WR	CERNADA	SHAFT
810926	45957.5	81032	USSR	ASTRAK RUSS	ISC	46.820	48.280	5.2	0.0	0.000	8.5	8.5	PNE	VEGA	SHAFT
810926	50357.0	81033	USSR	ASTRAK RUSS	ISC	46.790	48.270	5.3	0.0	0.000	8.5	8.5	PNE	VEGA	SHAFT
811001	121456.9	81035	USSR	NZ											

820704	11714.4	82016	USSR	SEMI KAZAKH	UGS	49.995	78.856	6.1	4.9	0.000	0.001	150.0	WR		SHAFT	F3x
820721	171300.0	82018	FRANCE	MURUROA	WTN	-22.000	-139.000	0.0	0.0	0.000	0.0	5.0	WR		SHAFT/GR	
820725	180158.1	82019	FRANCE	MURUROA	UGS	-21.864	-138.943	5.6	0.0	0.000	0.0	150.0	WR		SHAFT/LG	
820729	200500.0	82020	USA	NTS	UGS	37.102	-116.075	4.5	0.0	0.400	20.0	150.0	WR		SHAFT	
820731	210002.2	82021	USSR	IRKUTS RUSS	UGS	53.813	104.132	5.1	3.8	0.000	8.5	8.5	PNE		RIFT	
820805	140000.0	82023	USA	NTS	UGS	37.084	-116.007	5.7	4.2	0.640	138.0	138.0	WR		SHAFT	
820811	150000.0	82024	USA	NTS	UGS	37.190	-116.048	0.0	0.0	0.216	0.0	20.0	WR		SHAFT	
820823	24304.2	82025	USSR	SEMI KAZAKH	UGS	49.747	77.971	4.7	0.0	0.000	0.001	20.0	WR		TUNNEL	2x
820831	13100.5	82027	USSR	SEMI KAZAKH	UGS	49.920	78.812	5.4	3.5	0.000	0.001	20.0	WR		SHAFT	2x
820902	140000.0	82029	USA	NTS	UGS	37.020	-116.016	0.0	0.0	0.229	0.0	20.0	WR		CERRO	
820904	175958.4	82031	USSR	KRASNO RUSS	UGS	69.206	81.647	5.2	3.5	0.000	16.0	16.0	PNE		RIFT	
820921	25700.8	82033	USSR	SEMI KAZAKH	UGS	49.854	78.216	5.2	0.0	0.000	0.001	20.0	WR		TUNNEL	2x
820923	160000.0	82034	USA	NTS	UGS	37.212	-116.207	4.9	0.0	0.000	0.0	20.0	WE		HURON LANDING	
820923	160000.0	82035	USA	NTS	UGS	37.212	-116.207	4.9	0.0	0.000	0.0	20.0	WE		DIAMOND ACE	
820923	170000.0	82036	USA	NTS	UGS	37.175	-116.088	4.9	0.0	0.451	20.0	150.0	WR		FRISCO	
820925	175957.1	82037	USSR	KRASNO RUSS	UGS	64.313	91.834	5.1	0.0	0.000	8.5	8.5	PNE		RIFT	
820929	133000.1	82038	USA	NTS	UGS	37.091	-116.045	0.0	0.0	0.564	0.0	150.0	WR		BORREGO	
821005	0.0	82060	CHINA	LOP NOR	NRD	41.632	88.301	0.0	0.0	0.000	3.0	15.0	WR		UG	
821010	45956.7	82040	USSR	JAKUTS RUSS	UGS	61.553	112.864	5.3	0.0	0.000	15.0	15.0	PNE		NEVA	
821011	71458.2	82041	USSR	NZ RUSS	UGS	73.392	54.559	5.6	3.6	0.000	0.001	150.0	WR		TUNNEL	F4x
821016	55957.1	82042	USSR	ASTRAK RUSS	UGS	46.730	48.197	5.2	3.0	0.000	13.5	13.5	PNE		VEGA	
821016	60457.2	82043	USSR	ASTRAK RUSS	UGS	46.748	48.215	5.2	3.0	0.000	8.5	8.5	PNE		VEGA	
821016	60957.1	82044	USSR	ASTRAK RUSS	UGS	46.754	48.270	5.2	3.1	0.000	8.5	8.5	PNE		VEGA	
821016	61457.3	82045	USSR	ASTRAK RUSS	UGS	46.743	48.213	5.4	3.1	0.000	8.5	8.5	PNE		VEGA	
821112	191700.1	82047	USA	NTS	UGS	37.024	-116.032	4.4	0.0	0.336	0.0	20.0	WR		SEYVAL	
821127	0.0	82061	FRANCE	MURUROA	SPA	-22.000	-139.000	0.0	0.0	0.000	0.0	5.0	WR		PROCRIS	
821205	33712.6	82051	USSR	SEMI KAZAKH	UGS	49.928	78.869	6.1	4.4	0.000	0.001	150.0	WR		SHAFT	F2x
821210	152000.0	82052	USA	NTS	UGS	37.030	-116.072	4.6	0.0	0.413	20.0	150.0	WR		MANTECA	
821225	42305.6	82053	USSR	SEMI KAZAKH	UGS	49.871	78.095	4.8	3.4	0.000	0.001	20.0	WR		TUNNEL	F2x
821226	33514.1	82054	USSR	SEMI KAZAKH	UGS	50.066	79.043	5.7	0.0	0.000	20.0	150.0	FMS/WR		SHAFT	F2x
830211	160000.1	83002	USA	NTS	UGS	37.051	-116.045	0.0	0.0	0.304	0.0	20.0	WR		COALORA	
830217	170000.0	83003	USA	NTS	UGS	37.163	-116.063	4.0	0.0	0.343	0.0	20.0	WR		CHEDEAM	
830311	0.0	83055	USSR	SEMI KAZAKH	MTM	50.000	78.000	0.0	0.0	0.000	0.0	0.001	SAM		TUNNEL	
830326	202000.0	83005	USA	NTS	UGS	37.301	-116.460	5.1	0.0	0.542	20.0	150.0	WR		CABRA	
830330	41700.0	83006	USSR	SEMI KAZAKH	HFS	49.000	79.000	5.0	0.0	0.000	0.001	20.0	WR		TUNNEL	
830412	34105.2	83007	USSR	SEMI KAZAKH	HFS	49.815	78.222	4.9	0.0	0.000	0.001	20.0	WE		TUNNEL	
830414	190500.1	83008	USA	NTS	UGS	37.073	-116.040	5.7	0.0	0.533	0.0	150.0	WR		TURQUOISE	
830419	185258.4	83009	FRANCE	MURUROA	UGS	-21.847	-138.906	5.6	0.0	0.000	0.0	150.0	WR		EURYTOS	
830422	135300.0	83010	UK	NTS	UGS	37.112	-116.022	4.0	0.0	0.265	0.0	20.0	WR		ARMADA	
830425	0.0	83057	FRANCE	MURUROA	SPA	-22.000	-139.000	0.0	0.0	0.000	0.0	5.0	WR		AUTOMEDON	
830504	0.0	83056	CHINA	LOP NOR	NRD	41.500	89.000	0.0	0.0	0.000	0.0	0.0	WR		UG	
830505	152000.0	83011	USA	NTS	UGS	37.012	-116.089	4.5	0.0	0.390	0.0	20.0	WR		CROWDIE	
830525	173058.2	83012	FRANCE	MURUROA	UGS	-21.895	-138.918	5.9	4.1	0.000	0.0	150.0	WR		CINYRAS	
830526	150000.0	83013	USA	NTS	UGS	37.103	-116.006	4.4	0.0	0.384	0.0	20.0	WR		FAHADA	
830526	0.0	83054	USA	NTS	DOE	37.000	-116.000	0.0	0.0	0.000	0.0	20.0	WE		MINI JADE	
830530	33344.5	83014	USSR	SEMI KAZAKH	UGS	49.740	78.206	5.4	0.0	0.000	0.001	20.0	FMS/WR		TUNNEL	F2x
830609	171000.0	83015	USA	NTS	UGS	37.158	-116.089	4.5	0.0	0.320	0.0	20.0	WR		DANABLU	
830612	23643.5	83016	USSR	SEMI KAZAKH	UGS	49.906	78.981	6.1	4.6	0.000	0.001	150.0	WR		SHAFT	F2x
830618	0.0	83058	FRANCE	MURUROA	SPA	-22.000	-139.000	0.0	0.0	0.000	0.0	5.0	WR		BURISIS	
830624	25611.1	83017	USSR	SEMI KAZAKH	UGS	49.810	78.107	4.7	0.0	0.000	0.001	20.0	WR		TUNNEL	
830628	174558.6	83018	FRANCE	MURUROA	UGS	-21.745	-138.917	5.4	4.5	0.000	0.0	20.0	WR		OXYLOS	
830710	35957.1	83019	USSR	KAZAKH	UGS	51.308	53.273	5.3	0.0	0.000	15.0	15.0	PNE		LIRA	
830710	40457.1	83020	USSR	KAZAKH	UGS	51.340	53.270	5.3	0.0	0.000	15.0	15.0	PNE		LIRA	
830710	40957.1	83021	USSR	KAZAKH	UGS	51.344	53.291	5.2	0.0	0.000	15.0	15.0	PNE		LIRA	
830720	203000.0	83022	FRANCE	MURUROA	WTN	-22.000	-139.000	0.0	0.0	0.000	0.0	20.0	WR		BATTOS	
830803	133000.1	83024	USA	NTS	UGS	37.119	-116.084	4.2	0.0	0.326	0.0	20.0	WR		LABAN	
830804	171358.2	83025	FRANCE	MURUROA	UGS	-21.835	-138.922	5.2	0.0	0.000	0.0	150.0	WR		CARNABON	
830811	140000.1	83026	USA	NTS	UGS	36.998	-116.003	4.4	0.0	0.320	0.0	20.0	WR		SABADO	
830818	160958.6	83027	USSR	NZ RUSS	UGS	73.383	54.913	5.9	4.2	0.000	0.001	150.0	WR/P/S		TUNNEL	F5x
830827	135959.9	83028	USA	NTS	UGS	37.192	-115.992	4.1	0.0	0.000	0.0	20.0	WR		JARLSBERG	
830901	140000.0	83029	USA	NTS	UGS	37.273	-116.355	5.4	0.0	0.625	143.0	143.0	WR		CHANCELLOR	
830911	63310.4	83030	USSR	SEMI KAZAKH	UGS	49.878	78.183	4.8	0.0	0.000	0.001	20.0	WE		TUNNEL	
830921	150000.0	83031	USA	NTS	UGS	37.210	-116.209	0.0	0.0	0.405	0.0	20.0	WE		MIDNIGHT ZEPHYR	
830921	0.0	83052	USA	NTS	DOE	37.000	-116.000	0.0	0.0	0.000	0.0	20.0	WR		BRANCO/HERKIM	
830922	150000.1	83032	USA	NTS	UGS	37.106	-116.049	0.0	0.0	0.533	0.0	150.0	WR		TECHADO	
830924	45957.1	83033	USSR	ASTRAK RUSS	UGS	46.816	48.291	5.1	0.0	0.000	8.5	8.5	PNE		VEGA	
830924	50457.2	83034	USSR	ASTRAK RUSS	UGS	46.817	48.279	5.0	0.0	0.000	8.5	8.5	PNE		VEGA	
830924	50957.5	83035	USSR	ASTRAK RUSS	UGS	46.860	48.272	4.9	0.0	0.000	8.5	8.5	PNE		VEGA	
830924	51457.1	83036	USSR	ASTRAK RUSS	UGS	46.780	48.300	5.2	0.0	0.000	8.5	8.5	PNE		VEGA	
830924	51957.1	83037	USSR	ASTRAK RUSS	UGS	46.796	48.297	5.2	0.0	0.000	8.5	8.5	PNE		VEGA	
830924	52457.4	83038	USSR	ASTRAK RUSS	UGS	46.837	48.231	5.2	0.0	0.000	8.5	8.5	PNE		VEGA	
830925	130957.7	83039	USSR	NZ RUSS	UGS	73.348	54.495	5.8	0.0	0.000	0.001	150.0	WR/WE		TUNNEL	F4x
830929	0.0	83053	USA	NTS	DOE	37.000	-116.000	0.0	0.0	0.000	0.0	20.0	SE		NAVATA	
831006	14706.5	83040	USSR	SEMI KAZAKH	UGS	49.932	78.843	6.0	0.0	0.000	0.001	150.0	WR		SHAFT	F2x
831006	100002.8	83041	CHINA	LOP NOR	UGS	41.566	88.766	5.5	0.0	0.000	20.0	100.0	WR		UG	
831026	15504.8	83042	USSR	SEMI KAZAKH	UGS	49.921	78.907	6.1	4.6	0.000	20.0	150.0	WR		SHAFT	
831102	0.0	83059	USSR	SEMI KAZAKH	MTM	50.000	78.000	0.0	0.0	0.000	0.001	20.0	WR		TUNNEL	
831120	32704.4	83043	USSR	SEMI KAZAKH	UGS	50.066	79.036	5.5	0.0	0.000	0.001	20.0	WR		SHAFT	2x
831129	21906.5	83044	USSR	SEMI KAZAKH	UGS	49.764	78.169	5.4	0.0	0.000	0.001	20.0	WR		TUNNEL	
831129	0.0	83060	USSR	SEMI KAZAKH	MTM	50.000	78.000	0.0	0.0	0.000	0.001	20.0	WR		TUNNEL	2x
831203	165800.0	83045	FRANCE	MURUROA	WTN	-22.000	-139.000	0.0	0.0	0.000	0.0	5.0	WR		LINOS	
831207	172800.0	83046	FRANCE	MURUROA	WTN	-22.000	-139.000	0.0	0.0	0.000	0.0	20.0	WR		GYGES	
831209	155959.2	83047	USA	NTS	UGS	37.021	-115.975	0.0	0.0	0.000	0.0	20.0	WR		MUGGINS	
831216																

840913	140000.0	84034	USA	NTS	BKY	0.000	0.000	5.0	0.0	0.000	20.0	150.0	WR	BRETON	SHAFT
840917	205957.4	84036	USSR	KEMERO RUSS	UGS	55.835	87.408	4.9	0.0	0.000	10.0	10.0	PNE	KVARTS	SHAFT
841002	181400.0	84054	USA	NTS	BKY	0.000	0.000	4.3	0.0	0.000	0.0	20.0	WR	VERMEJO	SHAFT
841003	55957.7	84037	CHINA	LOP NOR	UGS	41.633	88.781	5.3	0.0	0.000	15.0	70.0	WR		UG
841018	45700.0	84038	USSR	SEMI KAZAKH	NOA	50.000	80.000	4.5	0.0	0.000	0.001	20.0	WE		TUNNEL
841025	62957.6	84039	USSR	NZ RUSS	UGS	73.365	54.979	5.8	5.3	0.000	0.001	150.0	WR		TUNNEL F4x
841027	15010.6	84040	USSR	SEMI KAZAKH	UGS	49.950	78.842	6.2	4.4	0.000	20.0	150.0	WR		SHAFT
841027	55958.6	84041	USSR	ASTRAK RUSS	UGS	47.044	47.919	4.8	0.0	0.000	3.2	3.2	PNE	VEGA	SHAFT
841027	60457.1	84042	USSR	ASTRAK RUSS	UGS	46.843	48.023	4.8	0.0	0.000	3.2	3.2	PNE	VEGA	SHAFT
841027	171600.0	84043	FRANCE	MURUROA	WTN	0.000	0.000	4.8	0.0	0.000	0.0	20.0	WR	MACHAON	SHAFT/GR
841102	204500.0	84044	FRANCE	MURUROA	BKY	0.000	0.000	0.0	0.0	0.000	0.0	150.0	WR	ACASTE	SHAFT/LG
841110	164000.0	84045	USA	NTS	BKY	0.000	0.000	4.4	0.0	0.000	0.0	20.0	WR	VILLITA	SHAFT
841123	35500.0	84046	USSR	SEMI KAZAKH	NOA	49.000	78.000	4.3	0.0	0.000	0.001	20.0	WR		TUNNEL 3x
841201	165100.0	84056	FRANCE	MURUROA	WTN	-22.000	-139.000	4.2	0.0	0.000	0.0	5.0	WR	MILLETOS	SHAFT/GR
841202	31900.0	84047	USSR	SEMI KAZAKH	NOA	50.000	81.000	6.1	0.0	0.000	0.001	150.0	WR/FMS		SHAFT F2x
841206	172900.0	84048	FRANCE	MURUROA	BKY	0.000	0.000	0.0	0.0	0.000	0.0	150.0	WR	MENNON	SHAFT/LG
841209	194000.0	84049	UK	NTS	NOA	36.000	-112.000	5.1	0.0	0.000	20.0	150.0	WR	EGMONT	SHAFT
841215	144459.0	84050	USA	NTS	NOA	37.000	-116.000	5.0	0.0	0.000	20.0	150.0	WR	TIERRA	SHAFT
841216	35500.0	84051	USSR	SEMI KAZAKH	NOA	48.000	77.000	6.6	0.0	0.000	0.001	150.0	WR		SHAFT F2x
841219	60000.0	84052	CHINA	LOP NOR	HFS	41.500	89.000	4.7	0.0	0.000	5.0	50.0	WR		UG
841220	162000.0	84055	USA	NTS	BKY	0.000	0.000	4.2	0.0	0.000	0.0	20.0	WR	MINERO	SHAFT
841228	35003.0	84053	USSR	SEMI KAZAKH	NOA	49.000	80.000	6.6	0.0	0.000	0.001	150.0	WR/PNE		SHAFT F2x
850210	32707.5	85001	USSR	SEMI KAZAKH	UGS	49.869	78.818	5.9	4.4	0.000	0.001	150.0	WR		SHAFT F3x
850315	163100.1	85002	USA	NTS	UGS	37.058	-116.045	4.8	0.0	0.427	20.0	150.0	WR	VAUGHN	SHAFT
850323	183000.0	85003	USA	NTS	UGS	37.180	-116.089	5.4	0.0	0.000	20.0	150.0	WR	COTTAGE	SHAFT
850402	200000.0	85004	USA	NTS	UGS	37.095	-116.032	5.7	4.7	0.640	20.0	150.0	WR	HERMOSA	SHAFT
850406	231500.0	85005	USA	NTS	UGS	37.201	-116.207	4.8	0.0	0.000	0.0	20.0	WE	MISTY RAIN	TUNNEL F
850425	5706.5	85006	USSR	SEMI KAZAKH	UGS	49.907	78.932	5.9	4.1	0.000	20.0	150.0	WR		SHAFT 2x
850430	172900.0	85007	FRANCE	MURUROA	WTN	0.000	0.000	0.0	0.0	0.000	0.0	20.0	WR	CERCYON	SHAFT/GR
850502	152000.0	85008	USA	NTS	UGS	37.253	-116.325	5.7	4.7	0.661	20.0	150.0	WR	TOWANDA	SHAFT
850508	202800.0	85009	FRANCE	MURUROA	WTN	0.000	0.000	0.0	0.0	0.000	0.0	150.0	WR	NISOS	SHAFT/LG
850603	173000.0	85010	FRANCE	MURUROA	WTN	0.000	0.000	0.0	0.0	0.000	0.0	20.0	WR	TALASO	SHAFT/GR
850607	174000.0	85011	FRANCE	MURUROA	WTN	0.000	0.000	0.0	0.0	0.000	0.0	20.0	WR	ERGINOS	SHAFT/LG
850612	151500.1	85012	USA	NTS	UGS	37.248	-116.489	5.5	0.0	0.608	20.0	150.0	WR	SALUT	SHAFT
850612	173000.0	85013	USA	NTS	UGS	37.008	-116.084	4.5	0.0	0.293	0.0	20.0	WR	VILLE	SHAFT
850615	5700.0	85014	USSR	SEMI KAZAKH	HFS	50.000	79.000	7.2	4.5	0.000	0.001	150.0	WR		SHAFT F3x
850618	0.0	85034	USSR	TUYMEN RUSS	MTM	0.000	0.000	0.0	0.0	0.000	2.5	2.5	PNE	BENZOL	SHAFT
850626	180300.0	85015	USA	NTS	UGS	37.124	-116.122	4.3	0.0	0.381	0.0	20.0	WR	MARIBO	SHAFT
850630	23900.0	85016	USSR	SEMI KAZAKH	HFS	50.000	79.000	7.1	4.4	0.000	0.001	150.0	WR		SHAFT F2x
850711	0.0	85035	USSR	SEMI KAZAKH	MTM	50.000	78.000	0.0	0.0	0.000	0.001	20.0	WR		TUNNEL
850718	211457.5	85017	USSR	ARKHAN RUSS	UGS	65.965	40.754	5.0	0.0	0.000	8.5	8.5	PNE	AGAT	SHAFT
850719	0.0	85036	USSR	SEMI KAZAKH	MTM	50.000	78.000	0.0	0.0	0.000	0.001	20.0	WR		TUNNEL
850720	5300.0	85018	USSR	SEMI KAZAKH	HFS	50.000	79.000	6.7	0.0	0.000	20.0	150.0	WR		SHAFT
850725	31100.0	85019	USSR	SEMI KAZAKH	HFS	50.000	79.000	5.3	0.0	0.000	0.001	20.0	WR/SAM		TUNNEL F4x
850725	140000.0	85020	USA	NTS	UGS	37.297	-116.438	5.2	0.0	0.000	20.0	150.0	WR	SERENA	SHAFT
850814	0.0	85031	USA	NTS	DOE	37.000	-116.000	0.0	0.0	0.000	0.0	20.0	WR	CEBRERO	SHAFT
850817	162500.0	85021	USA	NTS	UGS	37.002	-116.043	4.5	0.0	0.332	0.0	20.0	WR	CHAMITA	SHAFT
850927	141500.0	85022	USA	NTS	UGS	37.099	-116.002	4.8	0.0	0.366	0.0	20.0	WR	PONIL	SHAFT
851009	231959.1	85023	USA	NTS	UGS	37.209	-116.152	4.6	0.0	0.000	0.0	20.0	WE	DIAMOND BEECH	TUNNEL
851009	0.0	85032	USA	NTS	DOE	37.000	-116.000	0.0	0.0	0.000	0.0	20.0	WE	MILL YARD	TUNNEL
851016	213500.0	85024	USA	NTS	UGS	37.110	-116.121	4.8	0.0	0.415	20.0	150.0	WR	ROQUEFORT	SHAFT
851024	175000.0	85025	FRANCE	MURUROA	WTN	-22.000	-139.000	4.8	0.0	0.000	0.0	5.0	WR	HERO	SHAFT/GR
851026	163500.0	85026	FRANCE	MURUROA	WTN	-22.000	-139.000	0.0	0.0	0.000	0.0	150.0	WR	CODROS	SHAFT/LG
851030	0.0	85033	USA	NTS	DOE	37.000	-116.000	0.0	0.0	0.000	0.0	20.0	WR	ABO	SHAFT
851124	163000.0	85027	FRANCE	MURUROA	WTN	-22.000	-139.000	4.9	0.0	0.000	0.0	20.0	WR	ZETES	SHAFT/GR
851126	174200.0	85028	FRANCE	MURUROA	WTN	-22.000	-139.000	5.6	6.0	0.000	0.0	150.0	WR	MEGAREE	SHAFT/LG
851205	150000.0	85029	UK	NTS	UGS	37.053	-116.045	5.7	0.0	0.000	20.0	150.0	WR	KINBIETO	SHAFT
851228	190100.0	85030	USA	NTS	UGS	37.238	-116.473	5.3	0.0	0.000	20.0	150.0	WR	MINISTONE	SHAFT
860322	161500.0	86001	USA	NTS	UGS	37.083	-116.066	5.3	0.0	0.000	29.0	29.0	WR	GLENDCE	SHAFT
860410	140829.4	86002	USA	NTS	UGS	37.157	-116.204	5.1	1.0	0.000	0.0	20.0	WE	MIGHTY OAK	TUNNEL F
860420	0.0	86022	USA	NTS	DOE	37.000	-116.000	0.0	0.0	0.000	0.0	20.0	WR	MOGOLLON	SHAFT
860422	143000.0	86003	USA	NTS	UGS	37.264	-116.440	5.3	0.0	0.000	0.0	20.0	WR	JEFFERSON	SHAFT
860426	170156.6	86004	FRANCE	MURUROA	WTN	-22.150	-139.120	4.8	0.0	0.000	0.0	20.0	WR	HULLOS	SHAFT/GR
860506	165800.0	86005	FRANCE	MURUROA	WTN	-22.000	-139.000	0.0	0.0	0.000	0.0	5.0	WR	CETO	SHAFT/GR
860521	135900.0	86006	USA	NTS	UGS	37.125	-116.061	4.8	0.0	0.000	0.0	20.0	WR	PANAMINT	SHAFT
860527	171500.0	86007	FRANCE	MURUROA	WTN	-22.000	-139.000	0.0	0.0	0.000	0.0	20.0	WR	STHELENOSS	SHAFT/GR
860530	172458.2	86008	FRANCE	MURUROA	WTN	-21.913	-139.100	5.6	0.0	0.000	0.0	150.0	WR	GALATEE	SHAFT/LG
860605	150400.0	86009	USA	NTS	UGS	37.098	-116.016	5.2	0.0	0.000	20.0	150.0	WR	TALO	SHAFT
860625	202745.1	86010	UK	NTS	UGS	37.265	-116.499	5.5	0.0	0.000	20.0	150.0	WR	DARWIN	SHAFT
860717	210000.0	86011	USA	NTS	UGS	37.279	-116.356	5.7	0.0	0.000	119.0	119.0	WR	CYBAR	SHAFT
860724	150500.0	86012	USA	NTS	UGS	37.143	-116.071	4.5	0.0	0.000	0.0	20.0	WR	CORNUCOPIA	SHAFT
860904	0.0	86023	USA	NTS	DOE	37.000	-116.000	0.0	0.0	0.000	0.0	20.0	WR	GALVESTON	SHAFT
860911	145700.0	86013	USA	NTS	UGS	37.069	-116.050	0.0	0.0	0.000	0.0	20.0	WR	ALEMAN	SHAFT
860930	223000.1	86014	USA	NTS	UGS	37.300	-116.307	5.5	0.0	0.000	20.0	150.0	WR	LABQUARK	SHAFT
861016	192500.0	86015	USA	NTS	UGS	37.220	-116.462	0.0	0.0	0.000	20.0	150.0	WR	BELMONT	SHAFT
861110	165800.0	86016	FRANCE	MURUROA	WTN	-22.000	-139.000	0.0	0.0	0.000	0.0	5.0	WR	HESIONE	SHAFT/GR
861112	170158.5	86017	FRANCE	MURUROA	UGS	-21.894	-139.068	0.0	0.0	0.000	0.0	20.0	WR	NAUPLIOS	SHAFT/LG
861114	160000.0	86018	USA	NTS	UGS	37.100	-116.048	5.7	0.0	0.000	20.0	150.0	WR	GASCON	SHAFT
861206	171000.0	86019	FRANCE	MURUROA	WTN	-22.000	-139.000	0.0	0.0	0.000	0.0	5.0	WR	PENELEOS	SHAFT/GR
861210	171458.6	86020	FRANCE	MURUROA	UGS	-21.877	-138.986	5.3	0.0	0.000	0.0	150.0	WR	CIRCE	SHAFT/LG
861213	175005.0	86021	USA	NTS	UGS	37.263	-116.142	5.5	0.0	0.000	20.0	150.0	WR	BODIE	SHAFT
870203	152000.0	87001	USA	NTS	UGS	37.225	-116.080	0.0	0.0	0.000	0.0	20.0	WR/SE	HAZEBROOK	SHAFT 3x
870211	164500.0	87002	USA	NTS	UGS	37.011	-116.045	4.5	0.0	0.000	0.0	20.0	WR	TORNERO	SHAFT
870226	45824.8	87003	USSR	SEMI KAZAKH	HFS	50.000	78.000	5.4	0.0	0.000	0.001	20.0	FMS		TUNNEL
8															

871115	33106.7	87040	USSR	SEMI KAZAKH	HFS	49.872	78.795	7.1	4.4	0.000	0.001	150.0	WR		SHAFT	F2x
871119	163058.5	87041	FRANCE	MURUROA	WTN	-21.878	-139.037	0.0	0.0	0.000	0.0	150.0	WR	PELEE	SHAFT/LG	
871129	175900.0	87042	FRANCE	MURUROA	WTN	-22.000	-139.000	0.0	0.0	0.000	0.0	20.0	WR	DANAE	SHAFT/LG	
871201	163000.0	87043	USA	NTS	DOE	36.996	-116.004	0.0	0.0	0.000	0.0	20.0	WR	WACO	SHAFT	
871202	163000.0	87043	USA	NTS	DOE	37.235	-116.163	0.0	0.0	0.000	0.0	20.0	WE	MISSION CYBER	TUNNEL	
871213	32104.7	87044	USSR	SEMI KAZAKH	HFS	49.955	78.852	7.1	4.4	0.000	0.001	150.0	WR		SHAFT	F2x
871220	25506.3	87045	USSR	SEMI KAZAKH	HFS	49.753	78.024	5.2	0.0	0.000	0.001	20.0	FMS		TUNNEL	
871227	30504.7	87046	USSR	SEMI KAZAKH	HFS	49.831	78.744	7.4	4.5	0.000	0.001	150.0	WR		SHAFT	F2x
880206	41911.1	88001	USSR	SEMI KAZAKH	HFS	49.799	78.064	4.8	0.0	0.000	0.0	20.0	WR/SAM		TUNNEL	F3x
880213	30505.8	88002	USSR	SEMI KAZAKH	HFS	49.905	78.905	7.1	4.4	0.000	0.001	150.0	WR		SHAFT	F2x
880215	181000.0	88003	USA	NTS	HFS	37.314	-116.471	5.4	0.0	0.000	20.0	150.0	WR	KERNVILLE	SHAFT	
880403	13305.7	88004	USSR	SEMI KAZAKH	HFS	49.884	78.965	7.1	4.4	0.000	20.0	150.0	WR		SHAFT	
880407	171500.0	88005	USA	NTS	DOE	37.013	-116.044	0.0	0.0	0.000	0.0	20.0	WR	ABILENE	SHAFT	
880422	93006.8	88006	USSR	SEMI KAZAKH	HFS	49.822	78.119	5.0	0.0	0.000	0.001	20.0	WE		TUNNEL	
880504	5706.8	88007	USSR	SEMI KAZAKH	HFS	49.928	78.769	7.2	4.4	0.000	20.0	150.0	FMS		SHAFT	
880507	224958.1	88008	USSR	NZ RUSS	HFS	73.364	54.445	6.4	3.8	0.000	0.001	20.0	WE		TUNNEL	F3x
880511	165958.3	88009	FRANCE	MURUROA	WTN	-21.867	-139.072	0.0	0.0	0.000	0.0	150.0	WR	NELEE	SHAFT/LG	
880513	153500.1	88010	USA	NTS	HFS	37.124	-116.072	4.9	0.0	0.000	0.0	150.0	WR	SHELLBOURNE	SHAFT	
880521	223000.1	88011	USA	NTS	DOE	37.032	-115.987	0.0	0.0	0.000	0.0	150.0	WR	LAREDO	SHAFT	
880525	170058.4	88012	FRANCE	MURUROA	WTN	-21.903	-139.009	0.0	0.0	0.000	0.0	150.0	WR	NILOBE	SHAFT/LG	
880602	130000.0	88013	USA	NTS	HFS	37.260	-116.441	5.5	0.0	0.000	0.0	150.0	WR	COMSTOCK	SHAFT	
880614	22706.4	88014	USSR	SEMI KAZAKH	HFS	50.045	79.005	5.7	0.0	0.000	0.001	20.0	WR		SHAFT	
880616	171457.0	88015	FRANCE	MURUROA	WTN	-21.000	-139.000	0.0	0.0	0.000	0.0	5.0	WR	ANTIGONE	SHAFT/LG	
880622	140000.0	88016	USA	NTS	DOE	37.166	-116.072	0.0	0.0	0.000	0.0	150.0	WR	RHYOLITE	SHAFT	F
880622	0.0	88042	USA	NTS	DOE	37.000	-116.000	0.0	0.0	0.000	0.0	150.0	SE	NIGHTINGALE	SHAFT	F
880623	173058.6	88017	FRANCE	MURUROA	WTN	-21.906	-139.016	0.0	0.0	0.000	0.0	20.0	WR	DEJANIRE	SHAFT/LG	
880707	150530.0	88018	USA	NTS	HFS	37.252	-116.377	5.9	4.3	0.000	0.0	150.0	WR	ALAMO	SHAFT	
880817	170000.0	88019	USA	NTS	HFS	37.297	-116.307	5.6	4.1	0.000	0.0	150.0	WR	KEARSARGE	SHAFT	F
880822	161958.2	88020	USSR	TYUMEN RUSS	HFS	66.316	78.548	5.4	3.4	0.000	15.0	15.0	PNE	RUBIN	SHAFT	
880823	182959.3	88021	USA	NTS	DOE	37.001	-116.005	0.0	0.0	0.000	0.0	20.0	WR	HARLINGEN A/B	SHAFT	2x
880830	180000.0	88021	USA	NTS	HFS	37.086	-116.069	5.3	0.0	0.000	0.0	150.0	WR	BULLFROG	SHAFT	
880906	161958.6	88022	USSR	ARKHAN RUSS	HFS	61.331	47.955	5.0	3.0	0.000	8.5	8.5	PNE	RUBIN	SHAFT	
880914	35957.4	88023	USSR	SEMI KAZAKH	HFS	49.833	78.808	7.1	4.5	0.000	20.0	150.0	FMS		SHAFT	F
880929	70003.1	88025	CHINA	LOP NOR	HFS	41.750	88.474	4.9	0.0	0.000	1.0	20.0	WR		UG	
881013	140000.0	88026	USA	NTS	HFS	37.089	-116.049	6.1	4.2	0.000	0.0	150.0	WR	DALHART	SHAFT	
881018	34006.6	88027	USSR	SEMI KAZAKH	HFS	49.866	78.081	5.2	0.0	0.000	0.001	20.0	WE		TUNNEL	
881025	170000.0	88028	FRANCE	MURUROA	WTN	-22.000	-139.000	0.0	0.0	0.000	0.0	5.0	WR	ACRISIOS	SHAFT/LG	
881105	162958.4	88029	FRANCE	MURUROA	WTN	-21.883	-139.046	0.0	0.0	0.000	0.0	150.0	WR	THRASYMEDES	SHAFT/LG	
881109	0.0	88040	USA	NTS	DOE	37.000	-116.000	0.0	0.0	0.000	0.0	20.0	WR	MONAHANS A/B	SHAFT	2x
881112	33003.7	88030	USSR	SEMI KAZAKH	HFS	50.078	78.988	6.3	0.0	0.000	0.001	20.0	WR		SHAFT	
881123	35706.7	88031	USSR	SEMI KAZAKH	HFS	49.818	78.071	5.6	0.0	0.000	0.0	20.0	WR/F/SA		TUNNEL	F3x
881123	170058.0	88032	FRANCE	MURUROA	WTN	-21.991	-138.907	0.0	0.0	0.000	0.0	150.0	WR	PHYCRES	SHAFT/LG	
881130	175457.9	88033	FRANCE	FANGATAUFA	WTN	-22.244	-138.836	0.0	0.0	0.000	0.0	150.0	WR	CYCNOUS	SHAFT/LG	
881204	51953.0	88034	USSR	NZ RUSS	HFS	73.387	54.998	6.7	4.0	0.000	0.0	150.0	WR/WE/S		TUNNEL	F5x
881209	0.0	88041	USA	NTS	DOE	37.000	-116.000	0.0	0.0	0.000	0.0	20.0	SE	KAWICH A-W/A-B	SHAFT	2x
881210	203000.0	88035	USA	NTS	HFS	37.199	-116.209	5.1	0.0	0.000	0.0	150.0	WE	MISTY ECHO	TUNNEL	
881217	41806.9	88036	USSR	SEMI KAZAKH	HFS	49.886	78.926	0.0	4.4	0.000	0.001	150.0	WR		SHAFT	F2x
881228	52809.0	88037	USSR	SEMI KAZAKH	HFS	50.000	78.000	3.9	0.0	0.000	0.001	20.0	WR		TUNNEL	2x
890122	35706.6	89001	USSR	SEMI KAZAKH	HFS	49.924	78.831	0.0	4.4	0.000	0.001	150.0	WR		SHAFT	F2x
890210	206000.0	89002	USA	NTS	HFS	37.077	-116.001	5.4	0.0	0.000	20.0	150.0	WR	TEXARKANA	SHAFT	
890212	41506.8	89003	USSR	SEMI KAZAKH	HFS	49.925	78.740	7.0	4.4	0.000	20.0	150.0	WR		SHAFT	
890217	40106.9	89004	USSR	SEMI KAZAKH	HFS	49.868	78.079	5.1	0.0	0.000	0.001	20.0	WR		TUNNEL	
890224	161500.0	89005	USA	NTS	DOE	37.128	-116.122	0.0	0.0	0.000	0.0	20.0	WR/SE	KAWICH R/B	SHAFT	2x
890309	140500.0	89006	USA	NTS	HFS	37.143	-116.067	5.1	0.0	0.000	20.0	150.0	WR	INGOT	SHAFT	
890511	164458.1	89007	FRANCE	MURUROA	WTN	-21.881	-138.978	0.0	0.0	0.000	0.0	20.0	WR	EPEIOS	SHAFT/LG	
890515	131000.0	89008	USA	NTS	HFS	37.108	-116.121	4.6	0.0	0.000	0.0	20.0	WR/SE	PALISADE 1-3	SHAFT	3x
890520	175900.0	89009	FRANCE	MURUROA	WTN	-21.000	-139.000	0.0	0.0	0.000	0.0	5.0	WR	TECMESSA	SHAFT/LG	
890526	180700.0	89010	USA	NTS	DOE	37.086	-116.055	0.0	0.0	0.000	0.0	20.0	WR	TULIA	SHAFT	
890603	172958.4	89011	FRANCE	MURUROA	WTN	-21.832	-139.010	0.0	0.0	0.000	0.0	150.0	WR	NYCTEE	SHAFT/LG	
890610	172958.1	89012	FRANCE	FANGATAUFA	WTN	-22.252	-138.740	0.0	0.0	0.000	0.0	150.0	WR	CYZICOS	SHAFT/LG	
890622	211500.8	89013	USA	NTS	HFS	37.283	-116.412	0.0	0.0	0.000	20.0	150.0	WR	CONTACT	SHAFT	
890627	153000.0	89014	USA	NTS	HFS	37.275	-116.354	5.3	0.0	0.000	20.0	150.0	WR	AMARILLO	SHAFT	
890708	34657.6	89015	USSR	SEMI KAZAKH	HFS	49.873	78.815	6.8	0.0	0.000	20.0	150.0	WR		SHAFT	
890902	41657.3	89016	USSR	SEMI KAZAKH	HFS	50.039	79.019	5.8	3.4	0.000	0.001	20.0	WR		SHAFT	2x
890914	150000.1	89017	USA	NTS	DOE	37.376	-116.163	0.0	0.0	0.000	0.0	20.0	WE	DISKO ELM	TUNNEL	
891004	112957.6	89018	USSR	SEMI KAZAKH	HFS	49.746	78.013	5.2	0.0	0.000	0.001	20.0	WE		TUNNEL	
891019	94957.1	89019	USSR	SEMI KAZAKH	HFS	49.920	79.001	6.8	4.4	0.000	0.001	150.0	WR		SHAFT	F3x
891024	162958.0	89020	FRANCE	MURUROA	WTN	-21.902	-138.986	0.0	0.0	0.000	0.0	150.0	WR	HYPSPYLE	SHAFT/LG	
891031	153000.0	89021	USA	NTS	HFS	37.263	-116.491	5.6	0.0	0.000	20.0	150.0	WR	HORNITOS	SHAFT	
891031	165658.4	89022	FRANCE	MURUROA	WTN	-21.766	-138.970	0.0	0.0	0.000	0.0	20.0	WR	ERIGONE	SHAFT/LG	
891115	202000.1	89023	USA	NTS	DOE	37.107	-116.013	0.0	0.0	0.000	0.0	20.0	WR	MULESHOE	SHAFT	
891120	172857.9	89024	FRANCE	MURUROA	WTN	-21.917	-138.965	0.0	0.0	0.000	0.0	20.0	WR	TROS	SHAFT/LG	
891125	0.0	89028	FRANCE	MURUROA	SPA	-22.000	-139.000	0.0	0.0	0.000	0.0	0.0	SE	DAUNUS	SHAFT/GR	
891127	165957.9	89025	FRANCE	FANGATAUFAA	WTN	-22.258	-138.843	0.0	0.0	0.000	0.0	150.0	WR	LYCNS	SHAFT/LG	
891208	150000.0	89026	UK	NTS	HFS	37.231	-116.409	5.7	0.0	0.000	20.0	150.0	WR	BARNWELL	SHAFT	
891220	210000.0	89027	USA	NTS	DOE	37.000	-116.000	0.0	0.0	0.000	0.0	20.0	SE	WHITEFACE A/B	SHAFT	2x
900310	160000.0	90001	USA	NTS	HFS	37.113	-116.055	5.4	4.1	0.000	20.0	150.0	WR	METROPOLIS	SHAFT	
900406	170000.0	90018	USA	NTS	DOE	37.000	-116.000	0.0	0.0	0.000	0.0	20.0	WR	BOWIE	SHAFT	
900526	75958.3	90002	CHINA	LOP NOR	HFS	41.654	88.736	5.8	0.0	0.000	15.0	65.0	WR		UG	
900602	172958.7	90003	FRANCE	MURUROA	WTN	-21.819	-138.940	0.0	0.0	0.000	0.0	20.0	WR	TELEPHE	SHAFT/LG	
900607	173000.0	90004	FRANCE	MURUROA	WTN	-21.000	-138.000	0.0	0.0	0.000	0.0	20.0	WR	MEGAPENTHES	SHAFT/LG	
900613	160000.0	90005	USA													

950817	5957.7	95002	CHINA	LOP NOR	HFS	41.559	88.800	6.4	0.0	0.000	40.0	160.0	WR		UG
950905	212958.4	95003	FRANCE	MURUROA	WTN	-21.852	-138.844	0.0	0.0	0.000	0.0	20.0	WR	TETHYS	UG
951001	232957.9	95004	FRANCE	FANGATAUFA	WTN	-22.250	-138.745	0.0	0.0	0.000	0.0	110.0	WR	PLOUTOS	UG
951027	215958.1	95005	FRANCE	MURUROA	WTN	-21.891	-138.983	0.0	0.0	0.000	0.0	60.0	WR	AEPYTOS	UG
951121	212958.0	95006	FRANCE	MURUROA	WTN	-21.879	-139.032	0.0	0.0	0.000	0.0	40.0	WR	PHEGEE	UG
951227	212958.0	95007	FRANCE	MURUROA	WTN	-21.881	-138.973	0.0	0.0	0.000	0.0	30.0	WR	THEMISTO	UG
960127	212957.7	96001	FRANCE	FANGATAUFA	WTN	-22.236	-138.815	0.0	0.0	0.000	0.0	120.0	WR	XOUTHOS	UG
960608	25559.4	96002	CHINA	LOP NOR	HFS	41.650	88.760	6.3	0.0	0.000	30.0	120.0	WR		UG
960729	14859.1	96003	CHINA	LOP NOR	HFS	41.690	88.350	5.3	0.0	0.000	3.0	12.0	WR		UG
980511	101344.0	98001	INDIA	POKHRAN	HFS	27.070	71.700	5.3	0.0	0.000	0.0	20.0	WR	SHAKTI 1-3	UG
980513	65100.0	98003	INDIA	POKHRAN	NRD	27.070	71.700	0.0	0.0	0.000	0.0	1.0	WR		UG
980528	101617.6	98004	PAKIST	CHAGAI	HFS	28.900	64.890	0.0	0.0	0.000	0.0	35.0	WR		UG
980530	65457.1	98005	PAKIST	KHARAN	HFS	28.490	63.780	5.0	0.0	0.000	0.0	18.0	WR		UG

F3x
F2x
F5x
F

Appendix 1. Footnotes—USA

For the salvo explosions: unless otherwise noted in the footnotes the yield estimate indicates the yield of each explosion. Unless otherwise noted, all tests at the NTS or the Nellis Air Force Range before 15 September 1961 produced radioactivity detected off-site. Unless otherwise noted, no test on or after that date had a release of radioactivity that was detected off-site.

Date	ID no.	Text
510508	51008	First thermonuclear explosion.
570919	57039	First detonation contained underground.
611210	61068	First peaceful nuclear explosion (PNE), Plowshare Program. Multiple-purpose experiment in salt. Accidental release of radioactivity detected off-site.
610915	61017	Accidental release of radioactivity detected off-site.
611210	61068	Accidental release of radioactivity detected off-site.
611222	61071	Accidental release of radioactivity detected off-site.
620301	62012	Joint US–British test. Accidental release of radioactivity detected off-site.
620305	62913	Accidental release of radioactivity detected off-site.
620421	62023	Accidental release of radioactivity detected off-site.
620519	62040	Accidental release of radioactivity detected off-site.
620613	62051	Accidental release of radioactivity detected off-site.
620706	62062	Excavation experiment. Thermonuclear device. Release of radioactivity detected off-site.
620711	62067	Release of radioactivity detected off-site.
620714	62069	Release of radioactivity detected off-site.
620717	62070	Release of radioactivity detected off-site.
621019	62123	Accidental release of radioactivity detected off-site.
630515	63043	Release of radioactivity detected off-site.
630525	63044	Release of radioactivity detected off-site.
630605	63023	Operational release of radioactivity detected off-site.
630609	63046	Last US atmospheric test. Radioactivity detected off-site.
631212	63042	Accidental release of radioactivity detected off-site.
640123	64002	Operational release of radioactivity detected off-site.
640313	64005	Accidental release of radioactivity detected off-site.
641009	64030	Isotope production and explosive development.
641105	64036	Effects of contained explosion in carbonate rock.
641205	64040	Drill (Source-Lower): 3.4 kt; Drill (Target-Upper): < 20kt. Accidental release of radioactivity detected off-site.
641216	64041	Accidental release of radioactivity detected off-site.
641218	64043	Excavation test of explosive buried at greater depth in relation to yield. Release of radioactivity detected off-site.
650212	65005	Accidental release of radioactivity detected off-site.
650414	65016	Release of radioactivity detected off-site.
650507	65019	Accidental release of radioactivity detected off-site.
650616	65029	Accidental release of radioactivity detected off-site.
660305	66008	Accidental release of radioactivity detected off-site.
660324	66013	Excavation device experiment.
660425	66019	Accidental release of radioactivity detected off-site.
660615	66032	Accidental release of radioactivity detected off-site.
660728	66039	Excavation device experiment.
660912	66045	Accidental release of radioactivity detected off-site.
661105	66054	Excavation device experiment.
670119	67001	Accidental release of radioactivity detected off-site.
670622	67020	Excavation device experiment.

670626	67021	Controlled release of radioactivity detected off-site.
670629	67024	Accidental release of radioactivity detected off-site.
670831	67031	Accidental release of radioactivity detected off-site.
670921	67034	Emplacement technique experiment.
671210	67045	Joint government/industry gas stimulation experiment.
680118	68002	Accidental release of radioactivity detected off-site.
680126	68005	Release of radioactivity detected off-site.
680410	68016	Noor: 20–200 kt, Throw: <20 kt.
680917	68042	Excavation device experiment.
681208	68052	Release of radioactivity detected off-site.
690910	69023	Joint Government/industry gas stimulation experiment. Operational release of radioactivity detected off-site.
691029	69035	The yield figure given in the table is the total yield of all four explosions. Accidental release of radioactivity detected off-site.
700306	70011	Arabis-Red and Arabis-Green were weapons-related (WR) explosions, Arabis-Blue was a safety experiment (SE).
700505	70020	Controlled release of radioactivity detected off-site.
700526	70028	Flask-Yellow: 105 kt; Flask-Yellow and Flask-Red: 20 kt each.
701013	70056	Scree-Acajou and Scree-Alhambra were Weapons Related (WR), Scree-Chamois was a Safety Experiment (SE).
701028	70057	Truchas-Chacon and Truchas-Chamisal were Safety Experiments (SE), Truchas-Rodarte was a weapons related (WR) test.
701218	70051	Accidental release of radioactivity detected off-site.
720809	72049	Cebolia and Cuchillo were weapons related (WR) explosions, Solano was a safety experiment (SE).
721221	72056	Flax-Test: 20–200 kt, Flax-Backup: <20 kt.
730517	73006	Joint government/industry gas stimulation experiment. Last US peaceful nuclear explosion (PNE), Plowshare Program.
750206	75036	Portola and Portala-Larkin.
770816	77043	Gruyère and Gruyère-Gradino.
780510	78060	The Transom device was destroyed by the 5 Sep. 1979 detonation (Hearts).
790906	79033	The detonation destroyed the 10 May 1978 device (Transom) which had not detonated.
850406	85005	Controlled release of radioactivity detected off-site.
860322	86001	Operational release of radioactivity detected off-site.
880622	88016	The test was conducted simultaneously with the Nightingale safety experiment (SE).
880622	88042	The experiment was conducted simultaneously with the Rhyolite weapons related (WR) test.
880817	88019	The test was conducted in the presence of a team of Soviet scientists in accordance with the US-Soviet May/June 1988 Joint Verification Experiment (JVE) Agreement.
910914	91011	Verification test under the provisions of the 1990 Protocol to the 1974 Threshold Test Ban Treaty (TTBT).

Appendix 2. Footnotes—USSR

Date	ID no.	Text
530812	53012	First Soviet thermonuclear explosion.
611011	61039	First Soviet underground test.
621225	62177	Last Soviet atmospheric test.
650115	65002	First peaceful nuclear explosion (PNE); excavation explosion.
660422	66063	First use of nuclear explosion to form rock salt cavities.
660930	66049	First use of nuclear explosion to close gas plume boreholes.
671021	67039	One explosion of 20–150 kt, one of 150–1500 kt.
680820	68047	One SE of <0.001 kt, one WR explosion of 0.001–20 kt.
681107	68047	One explosion of <0.001 kt, two of 150–1500 kt each.
691014	69033	One explosion of 20–150 kt, two of 150–1500 kt each.

700625	70031	First use of nuclear explosion to create reservoirs for gas storage.
720328	72005	One SAM explosion of <0.001 kt, one WR explosion of 0.001–20 kt, one PNE of 0.001–20 kt.
720828	72005	One explosion of 20–150 kt, three of 150–1500 each.
720904	72024	First use of nuclear explosion for testing of ore-crushing technology.
721210	72032	One explosion of 0.001–20 kt, one of 20–150 kt.
730710	70015	Two WR explosions of 0.001–20 kt each, one SAM explosion of <0.001 kt.
730710	73015	Two WR explosions of 0.001–20 kt each, one SAM explosion of <0.001 kt.
730912	73023	Three explosions of 150–1500 kt each, one of 1500–10 000 kt.
731026	73029	First use of nuclear explosion for burial of petro-chemical industrial waste.
740829	74028	One explosion of 0.001–20 kt, one of 20–150 kt, three of 150–1500 kt each.
750823	75019	Four WE explosions: two of 0.001–20 kt each, two of 150–1500 kt each; four WR explosions: two of 20–150 kt each, two of 150–1500 kt each.
751021	75024	One explosion of 20–150 kt, four of 150–1500 kt each.
761020	76030	One SAM explosion of <0.001 kt, two WR explosions of 0.001–20 kt each, one FMS explosion of 0.001–20 kt.
761207	76036	One explosion of 0.001–20 kt, one of 20–150 kt.
770329	77046	One SAM explosion of <0.001 kt, two WR explosions of 0.001–20 kt each.
770901	77018	Three explosions of 0.001–20 kt each, one of 20–150 kt.
770905	77019	One FMS explosion of 0.001–20 kt, one WR explosion of 20–150 kt.
771130	77034	One explosion of 0.001–20 kt, one of 20–150 kt.
771226	77054	One explosion of <0.001 kt, three of 0.001–20 kt each.
780728	78020	Four explosions of 0.001–20 kt each, one of 20–150 kt.
780810	78022	One FMS explosion of 0.001–20 kt; four WR explosions of 0.001–20 kt each, one of 20–150 kt.
780829	78024	One SAM explosion of <0.001 kt, two WR explosions of 0.001–20 kt each.
780927	78031	One SE of <0.001 kt; five WR explosions of 0.001–20 kt each, one of 20–150 kt.
781017	78037	One explosion of 0.001–20 kt, one of 20–150 kt.
781104	78042	One explosion of 0.001–20 kt, one of 20–150 kt.
781129	78044	One explosion of 0.001–20 kt, one of 20–150 kt.
790117	79002	One explosion of 0.001–20 kt, one of 20–150 kt. Total energy release: 65 kt.
790707	79022	One explosion of 0.001–20 kt, one of 20–150 kt.
790714	79023	Total energy release: 21 kt.
790804	79028	One explosion of 0.001–20 kt, one of 20–150 kt.
790818	79031	One explosion of 0.001–20 kt, one of 20–150 kt.
790924	79038	Two explosions of 0.001–20 kt each, one of 20–150 kt.
791018	79044	Two explosions of 0.001–20 kt each, two of 20–150 kt each.
791024	79045	One explosion of 0.001–20 kt, one of 20–150 kt. Total energy release: 33 kt.
791028	79046	One explosion of 0.001–20 kt, one of 20–150 kt.
791202	79050	One WR explosion of 0.001–20 kt, one FMS explosion of 20–150 kt.
791223	79053	One explosion of 0.001–20 kt, one of 20–150 kt.
800629	80021	Two explosions of 0.001–20 kt each, one of 20–150 kt.
801011	80036	Five explosions of 0.001–20 kt each, two of 20–150 kt each.
801214	80046	Two explosions of 0.001–20 kt each, one of 20–150 kt.
801227	80049	One explosion of 0.001–20 kt, one of 20–150 kt.
810329	81007	One WR explosion, two FMS explosions.
810422	81009	Two explosions of 0.001–20 each, one of 20–150 kt.
811001	81035	Three explosions of 0.001–20 kt each, one of 20–150 kt.
811018	81037	One WR explosion of 0.001–20 kt, one of 20–150 kt.
820625	82014	One WE explosion of 0.001–20 kt, one WR explosion of 0.001–20 kt.
820704	82016	Two explosions of 0.001–20 kt, one of 20–150 kt.

821011	82041	Three explosions of 0.001–20 kt each, one of 20–150 kt.
821205	82051	One explosion of 0.001–20 kt, one of 0.001–20 kt.
821226	82054	One FMS explosion of 20–150 kt, one WR explosion of 20–150 kt.
830530	83014	One FMS explosion of 0.001–20 kt, one WR explosion of 0.001–20 kt.
830612	83016	One explosion of 0.001–20 kt, one of 20–150 kt.
830818	83027	Three WR explosions: two of 0.001–20 kt each, one of 20–150 kt; one PNE of 0.001–20 kt; one SAM explosion of 0.001–20 kt.
830925	83039	Three WR explosions: two of 0.001–20 kt each, one of 20–150 kt; one WR explosion of 0.001–20 kt.
831006	83040	One explosion of 0.001–20 kt, one of 20–150 kt.
840415	84008	One explosion of 0.001–20 kt, one of 20–150 kt.
840425	84009	One explosion of 0.001–20 kt, one of 20–150 kt.
840526	84015	One explosion of 0.001–20 kt, one of 20–150 kt.
840714	84022	One explosion of 0.001–20 kt, one of 20–150 kt.
841025	84039	Three explosions of 0.001–20 kt each, one of 20–150 kt.
841123	84046	Three explosions of 0.001–20 kt each.
841202	84047	One FMS of 0.001–20 kt, one WR explosion of 20–150 kt,
841216	84051	One explosion of 0.001–20 kt, one of 20–150 kt.
841228	84053	One PNE of 0.001–20 kt, one WR explosion of 20–150 kt.
850210	85001	Two explosions of 0.001–20 kt each, one of 20–150 kt.
850615	85014	One explosion of 20–150 kt, two of 0.001–20 kt.
850630	85016	One explosion of 0.001–20 kt, one of 20–150 kt.
850725	85019	Two WR explosions of 0.001–20 kt each, two SAM explosions of 0.001–20 kt each.
870312	87004	Two explosions of 0.001–20 kt each.
870403	87048	Three explosions of 0.001–20 kt each.
870417	87007	Two explosions of 0.001–20 kt each, one of 20–150 kt.
870620	87020	One explosion of 0.001–20 kt, one of 20–150 kt.
870802	87028	One explosion of 0.001–20 kt, two of 20–150 kt each.
870802	87029	Three WR explosions: two of 0.001–20 kt each, one of 20–150 kt; one FMS explosion of 0.001–20 kt; one SAM explosion of 0.001–20 kt.
870918	87033	One WE explosion of 0.001–20 kt, one SAM explosion of 0.001–20 kt.
871115	87040	One explosion of 0.001–20 kt, one of 20–150 kt.
871213	87044	One explosion of 0.001–20 kt, one of 20–150 kt.
871227	87046	One explosion of 0.001–20 kt, one of 20–150 kt.
880206	88001	Two SAM explosions of <0.001 kt each, one WR explosion of 0.001–20 kt.
880213	88002	One explosion of 0.001–20 kt, one of 20–150 kt.
880507	88008	Two explosions of 0.001–20 kt each, one of 20–150 kt.
880914	88023	The test was conducted in the presence of a team of Soviet scientists in accordance with the US–Soviet May/June 1988 Joint Verification Experiment (JVE) Agreement.
881123	88031	One SAM explosion of <0.001 kt, one FMS explosion of 0.001–20 kt, one WR explosion of 0.001–20 kt.
881204	88034	One SAM explosion of <0.001 kt; one WE explosion of 0.001–20 kt; three WR explosions: two of 0.001–20 kt each, one of 20–150 kt.
881217	88036	One explosion of 0.001–20 kt, one of 20–150 kt
890122	89001	One explosion of 0.001–20 kt, one of 20–150 kt.
891019	89019	Two explosions of 0.001–20 kt each, one of 20–150 kt.
901024	90013	Seven WR explosions: two of <0.001 kt each, four of 0.001–20 kt each, one of 20–150 kt; one SAM explosion of <0.001 kt.

Appendix 3. Footnotes—UK

Date	ID no.	Text
531014	53017	Widespread contamination especially over aboriginal community.
560619	56016	Radioactive dust spread over parts of northern Australia.
580428	58017	First British two-stage thermonuclear test.
580923	58062	Last British atmospheric test.
620301	62012	First British underground test, first joint British-US test at the Nevada Test Site. Accidental release of radioactivity detected off site.

Appendix 4. Footnotes—France

Date	ID no.	Text
611107	61066	First French underground test.
620501	62027	Accidental release of radioactive gases resulted in the contamination of 12 soldiers.
680824	68035	First French thermonuclear explosion. The yield was >1000 kt.
680908	68040	The yield of the explosion was >1000 kt.
710612	71007	Fallout spread over the Tureia atoll.
740707	74016	Last French atmospheric test.
750605	75013	France's first underground test at its test centre in French Polynesia (Centre d'Experimentation du Pacifique, CEP).
790725	79025	The detonation caused a massive layer of limestone and coral to break off the edge of the atoll. The material fell into the lagoon and produced a large wave which washed over the atoll.
820627	82059	The test was observed by a scientific mission led by vulcanologist Haroun Tazieff. The team took air and water samples during the test to verify safety arrangements.

Appendix 5. Footnotes—China

Date	ID no.	Text
661228	66062	Two-stage hydrogen bomb principles test. Reduced amounts of fission materials and thermonuclear materials were used.
670617	67019	First Chinese full-yield, two-stage thermonuclear test.
690922	69027	China's first underground test.
761117	76033	Largest Chinese test. Fallout resulted on the USA.
801016	80038	Last atmospheric test conducted by any nuclear state.

Appendix 6. Footnotes—India

Date	ID no.	Text
980511	98001	India announced one 43 kt device, one 12 kt device and one 0.2 kt device. International seismological experts suggested a combined yield of not more than 25 kt. Precise data to determine whether the detonations should be counted as one or two tests, according to the TBT definition (see 2. Introduction to the list of nuclear explosions, 2.1. Definitions), are not available. On the basis of available information one test is listed.
980513	98002	Two explosions were announced, with yields of 0.2 and 0.6 kt, respectively. No signals were recorded by seismological stations outside India. The explosions are listed as one test.

Appendix 7. Footnotes—Pakistan

Date	ID no.	Text
980528	98004	Five explosions were announced. According to Pakistani scientists the yield of the largest explosion was 30–35 kt. The other four explosions were of low yield and their aggregate yield was 40–45 kt. Stations in the region, but outside Pakistan, suggested 10 kt. The explosions are listed as one test.
980530	98005	The yield of the explosion was announced to be 15–18 kt, but averaging the reports from more than 50 non-Pakistani seismological stations indicated a body wave magnitude of 4.3 kt, corresponding to a yield of 2–8 kt.