

THE STORY OF THE YEAR
2013

2013 (MMXIII) is the 2013th year of the Common Era (CE) and Anno Domini (AD) designations, the 13th year of the 3rd millennium, the 13th year of the 21st century, and the 4th year of the 2010s decade.

January

January 11 – The French military begins a five-month intervention into the Northern Mali conflict, targeting the militant Islamist Ansar Dine group.

January 16–20 – Thirty-nine international workers and one security guard die in a hostage crisis at a natural gas facility near In Aménas, Algeria.

February

February 12 – North Korea conducts its third underground nuclear test, prompting widespread condemnation and tightened economic sanctions from the international community.

February 15 – A meteor explodes over the Russian city of Chelyabinsk, injuring 1,491 people and damaging over 4,300 buildings. It is the most powerful meteor to strike Earth's atmosphere in over a century. The incident, along with a coincidental flyby of a larger asteroid, prompts international concern regarding the vulnerability of the planet to meteor strikes.

February 21 – American scientists use a 3D printer to create a living lab-grown ear from collagen and animal ear cell cultures. In the future, it is hoped, similar ears could be grown to order as transplants for human patients suffering from ear trauma or amputation.

February 28 – Benedict XVI resigns as pope, becoming the first to do so since Gregory XII in 1415, and the first to do so voluntarily since Celestine V in 1294.

March

March 13 – Cardinal Jorge Mario Bergoglio of Argentina is elected the 266th pope, whereupon he takes the name Francis and becomes the first Jesuit pope, the first pope from the Americas, and the first pope from the Southern Hemisphere.

March 24 – 2012–2013 Central African Republic conflict: Central African Republic President François Bozizé flees to the Democratic Republic of the Congo after rebel forces capture the nation's capital, Bangui.

March 25 – The European Union agrees to a €10 billion economic bailout for Cyprus. The bailout loan will be equally split between the European Financial Stabilisation Mechanism, the European Financial Stability Facility, and the International Monetary Fund. The deal precipitates a banking crisis in the island nation.

March 27 – Canada becomes the first country to withdraw from the United Nations Convention to Combat Desertification.

April

April 24: Savar building collapse.

April 2 – The United Nations General Assembly adopts the Arms Trade Treaty to regulate the international trade of conventional weapons.

April 15 – Two Chechen Islamist brothers explode two bombs at the Boston Marathon in Boston, Massachusetts, in the United States, killing 3 and injuring 264 others.

April 24 – An eight-story commercial building collapses in Savar Upazila near the Bangladeshi capital of Dhaka, leaving 1,129 dead and 2,500

injured. The accident is the deadliest non-terrorist structural collapse in modern times and the third-worst industrial disaster in history.

May

May 15 – In a study published in the scientific journal Nature, researchers from Oregon Health & Science University in the United States describe the first creation of human embryonic stem cells by cloning.

June

June 6 – American Edward Snowden discloses operations engaged by a US government mass surveillance program to news publications and flees the country, later being granted temporary asylum in Russia.

June 14–30 – Flash floods and landslides in the Indian states of Uttarakhand and Himachal Pradesh kill more than 5,700 people and trap more than 20,000.

July

July 1 – Croatia becomes the 28th member of the European Union.

July 3 – Amid mass protests across Egypt, President Mohamed Morsi is deposed in a military coup d'état, leading to widespread violence.

September

September 21 – al-Shabaab Islamic militants attack the Westgate shopping mall in Nairobi, killing at least 62 civilians and wounding over 170.

October

October 10 – Delegates from some 140 countries and territories sign the Minamata Treaty, a UNEP treaty designed to protect human health and the environment from emissions and releases of mercury and mercury compounds.

October 18 – Saudi Arabia rejects a seat on the United Nations Security Council making the country the first one to reject a seat on the Security Council. Jordan takes the seat on December 6.

November

November 8: Typhoon Haiyan.

November 8 – Typhoon Haiyan "Yolanda", one of the strongest tropical cyclones on record, hits the Philippines and Vietnam, causing devastation with at least 6,149 dead.

November 12 – Three Studies of Lucian Freud, a series of portraits of Lucian Freud by the British painter Francis Bacon, sells for US\$142.4 million in a New York City auction, setting a new world record for an auctioned work of art.

November 24 – Iran agrees to limit their nuclear development program in exchange for sanctions relief.

December

December 7 – Ninth Ministerial Conference of the World Trade Organization delegates sign the Bali Package agreement aimed at loosening global trade barriers.

December 14 – Chinese spacecraft Chang'e 3, carrying the Yutu rover, becomes the first spacecraft to "soft"-land on the Moon since 1976 and the third ever robotic rover to do so.

Deaths in
2013**January**

January 1 – Patti Page, American singer (b. 1927)

January 3 – Sergiu Nicolaescu, Romanian film director, actor, and politician (b. 1930)

January 7 – David R. Ellis, American film director (b. 1952)

January 9 – James M. Buchanan, American Nobel economist (b. 1919)

January 11 – **Nguyen Khanh**, Vietnamese general and politician (b. 1927)



January 15 – Nagisa Oshima, Japanese film director (b. 1932)

January 21 – Michael Winner, British film director and producer (b. 1935)

January 23 – Józef Glemp, Polish cardinal (b. 1929)

February

February 1 – Ed Koch, American lawyer and politician (b. 1924)

February 14 – Ronald Dworkin, American philosopher and lawyer (b. 1931)

February 17 – Tony Sheridan, British singer, songwriter, and musician (b. 1940)

February 18 – Kevin Ayers, British singer, songwriter, and musician (b. 1944)

February 19 – Armen Alchian, American economist (b. 1914)

Robert Coleman Richardson, American Nobel physicist (b. 1937)

February 22 – Wolfgang Sawallisch, German conductor and pianist (b. 1923)

February 23 – Julien Ries, Belgian cardinal (b. 1920)

March 1 – Stéphane Hessel, French diplomat and writer (b. 1917)

February 27 – Van Cliburn, American pianist (b. 1934)

February 28 – Donald A. Glaser, American Nobel physicist (b. 1926)

March

March 3 – Luis Cubilla, Uruguayan footballer (b. 1940)

March 5 – **Hugo Chávez**, President of Venezuela (b. 1954)



Paul Bearer, American professional wrestling manager (b. 1954)

March 6 – Alvin Lee, British guitarist (b. 1944)

March 7 – Peter Banks, British guitarist (b. 1947)

Damiano Damiani, Italian film director and screenwriter (b. 1922)

March 10 – Princess Lilian, Duchess of Halland, (b. 1915)

March 12 – Clive Burr, British drummer (b. 1957)

March 14 – Ieng Sary, Vietnamese-born Cambodian politician (b. 1925)

March 20 – Zillur Rahman, 19th President of Bangladesh (b. 1929)

March 21 – Pietro Mennea, Italian athlete (b. 1952)

March 22 – Bebo Valdés, Cuban pianist, bandleader, and composer (b. 1918)

March 23

Boris Berezovsky, Russian businessman (b. 1946)

Joe Weider, Canadian-born American bodybuilder and publisher (b. 1920)

March 27 – Hjalmar Andersen, Norwegian skater (b. 1923)

March 28 – Richard Griffiths, British actor (b. 1947)

April

April 2 – Jesús Franco, Spanish film director and screenwriter (b. 1930)

April 3 – Ruth Praver Jhabvala, German-born British novelist and screenwriter (b. 1927)

April 4 – Roger Ebert, American film critic and writer (b. 1942)

April 8 – **Margaret Thatcher**, Prime Minister of the United Kingdom (1979–1990) (b. 1925)



April 9 – Paolo Soleri, Italian-born American architect (b. 1919)

April 10 – Robert G. Edwards, British Nobel physiologist (b. 1925)

April 11

Maria Tallchief, American prima ballerina (b. 1925)

Jonathan Winters, American comedian and actor (b. 1925)

Hilary Koprowski, Polish virologist and immunologist (b. 1916)

April 14 – Colin Davis, British conductor (b. 1927)

April 18 – Storm Thorgerson, British graphic designer (b. 1944)

April 19 – François Jacob, French Nobel biologist (b. 1920)

April 22 – Richie Havens, American folk singer (b. 1941)

April 26 – George Jones, American country music singer (b. 1931)

April 28 – János Starker, Hungarian-born American cellist (b. 1924)

April 30 – Deanna Durbin, Canadian-born singer and actress (b. 1921)

May

May 2 – Jeff Hanneman, American guitarist (b. 1964)

May 4 – Christian de Duve, Belgian Nobel biochemist (b. 1917)

May 6 – Giulio Andreotti, 41st Prime Minister of Italy (b. 1919)

May 7 – Ray Harryhausen, American filmmaker and creator of visual effects (b. 1920)

May 13 – Kenneth Waltz, American political scientist (b. 1924)

May 15 – Henrique Rosa, President of Guinea-Bissau (2003–2005) (b. 1946)

May 17 – Jorge Rafael Videla, 42nd President of Argentina (b. 1925)

May 20 – Ray Manzarek, American keyboardist (b. 1939)

May 22 – Henri Dutilleul, French composer (b. 1916)

May 23 – Georges Moustaki, French singer and songwriter (b. 1934)

May 26 – Jack Vance, American novelist (b. 1916)

May 31 – Jean Stapleton, American actress (b. 1923)

June

June 3 – Frank Lautenberg, American politician (b. 1924)

June 6 – Jerome Karle, American Nobel chemist (b. 1918)

Esther Williams, American swimmer and actress (b. 1921)



June 7 – Pierre Mauroy, Prime Minister of France (1981–1984) (b. 1928)

Richard Ramirez, American serial killer (b. 1960)

June 8 – Yoram Kaniuk, Israeli writer (b. 1930)

June 9 – Iain Banks, British novelist (b. 1954)

June 11 – Robert Fogel, American Nobel economic historian (b. 1926)

June 15

Heinz Flohe, German footballer (b. 1948)

Kenneth G. Wilson, American Nobel physicist (b. 1936)

June 16 – Josip Kučer, Croatian footballer and coach (b. 1952)

Ottmar Walter, German footballer (b. 1924)

June 19 – James Gandolfini, American actor (b. 1961)

Gyula Horn, Prime Minister of Hungary (1994–1998) (b. 1932)

June 23 – Bobby Bland, American singer and songwriter (b. 1930)

Richard Matheson, American author and screenwriter (b. 1926)

June 24 – Emilio Colombo, 40th Prime Minister of Italy (b. 1920)

June 26 – Marc Rich, Belgian-born American commodities trader and criminal (b. 1934)

June 27 – Alain Mimoun, French track and field athlete (b. 1921)

June 29 – Jim Kelly, American martial artist and actor (b. 1946)

July

July 2 – Princess Fawzia Fuad of Egypt, Queen consort of Iran (1941–1948) (b. 1921)

Douglas Engelbart, American computer scientist and inventor (b. 1925)



July 12 – Amar Bose, American engineer and entrepreneur (b. 1929)

July 13 – Cory Monteith, Canadian actor (b. 1982)

July 19 – Mel Smith, British comedian and actor (b. 1952)

Bert Trautmann, German-born British footballer (b. 1923)

July 20 – Helen Thomas, American journalist (b. 1920)

July 22 – Dennis Farina, American actor (b. 1944)

July 23 – Emile Griffith, American welterweight boxer (b. 1938)

Djalma Santos, Brazilian footballer (b. 1929)

July 25 – Walter De Maria, American sculptor and composer (b. 1935)

Bernadette Lafont, French actress (b. 1938)

July 26 – J.J. Cale, American singer and songwriter (b. 1938)

July 28 – Eileen Brennan, American actress (b. 1932)

July 29 – Christian Benítez, Ecuadorian footballer (b. 1986)

July 30 – Antoni Ramallets, Spanish footballer (b. 1924)

August

August 5 – George Duke, American keyboardist (b. 1946)

August 8 – Karen Black, American actress (b. 1939)

August 10 – László Csátáry, Hungarian war criminal (b. 1915)

Eydie Gormé, American singer (b. 1928)

August 12 – Prince Friso of Orange-Nassau, (b. 1968)

August 18 – Dező Gyarmati, Hungarian water polo player (b. 1927)

August 19 – Cedar Walton, American pianist (b. 1934)

August 20 – Elmore Leonard, American novelist (b. 1925)

Marian McPartland, English-born pianist (b. 1918)

August 21 – C. Gordon Fullerton, American astronaut (b. 1936)

August 24 – Julie Harris, American actress (b. 1925)

August 25 – Gylmar dos Santos Neves, Brazilian footballer (b. 1930)

August 30 – Seamus Heaney, Irish Nobel poet (b. 1939)

August 31 – **David Frost**, British journalist and broadcaster (b. 1939)

**September**

September 1 – Tommy Morrison, American

boxer (b. 1969)

September 2

Ronald Coase, British Nobel economist (b. 1910)

Frederik Pohl, American writer (b. 1919)

September 5 – Rochus Misch, German bodyguard of Adolf Hitler (b. 1917)

September 12 – Ray Dolby, American engineer and inventor (b. 1933)

September 18 – **Ken Norton**, American boxer (b. 1943)



September 19 – Hiroshi Yamauchi, Japanese businessman (b. 1927)

September 22 – David H. Hubel, Canadian-born American Nobel neuroscientist (b. 1926)

October

October 1 – Tom Clancy, American writer (b. 1947)

October 3 – Sergei Belov, Russian basketball player (b. 1944)

October 4 – Vo Nguyen Giap, Vietnamese General (b. 1911)

October 7 – Patrice Chéreau, French opera and theatre director, filmmaker, actor and producer (b. 1944)

Ovadia Yosef, Israeli religious leader (b. 1920)

October 9 – Wilfried Martens, 60th and 62nd Prime Minister of Belgium (b. 1936)

October 10 – Scott Carpenter, American astronaut (b. 1925)

October 11 – Erich Priebke, German SS captain and war criminal (b. 1913)

October 14 – Bruno Metsu, French football coach (b. 1954)

October 16 – Ed Lauter, American actor (b. 1938)

October 23 – Anthony Caro, British sculptor (b. 1924)

October 24 – Manolo Escobar, Spanish singer (b. 1931)

October 25 – Bill Sharman, American basketball player and coach (b. 1926)

Marcia Wallace, American actress and comedienne (b. 1942)

October 27 – **Lou Reed**, American singer, songwriter, and musician (b. 1942)



October 28 – Tadeusz Mazowiecki, 1st Prime Minister of Poland (b. 1927)

November

November 1 – Hakimullah Mehsud, Emir of Tehrik-i-Taliban Pakistan (b. c. 1979)

November 2 – Walt Bellamy, American basketball player (b. 1939)

November 12 – John Tavener, British composer (b. 1944)

November 17 – Doris Lessing, British Nobel writer (b. 1919)

November 19 – Frederick Sanger, British Nobel biochemist (b. 1918)

November 20 – Joseph Paul Franklin, American murderer (b. 1950)

November 25

Bill Foulkes, British footballer (b. 1932)

Chico Hamilton, American drummer and bandleader (b. 1921)

November 26 – Arik Einstein, Israeli singer, songwriter, and actor (b. 1939)

November 28 – Mitja Ribic[ic], Slovene politician, 25th Prime Minister of Yugoslavia (b. 1919)

November 30 – Paul Walker, American actor (b. 1973)

December

December 5 – **Nelson Mandela**, 1st President of South Africa and Nobel laureate (b. 1918)



December 7 – Édouard Molinaro, French film director and screenwriter (b. 1928)

December 8 – John Cornforth, Australian–British Nobel chemist (b. 1917)

December 9 – Eleanor Parker, American actress (b. 1922)

December 10 – Jim Hall, American guitarist and composer (b. 1930)

December 12 – Jang Sung-taek, North Korean politician (b. 1946)

December 14 – Peter O'Toole, British Irish actor (b. 1932)

December 15

Harold Camping, American evangelist (b. 1921)

Joan Fontaine, Japanese-born British American actress (b. 1917)

December 16 – Ray Price, American singer and songwriter (b. 1926)

December 18 – Ronnie Biggs, British criminal (b. 1929)

December 23 – Mikhail Kalashnikov, Russian inventor (b. 1919)

December 26 – Marta Eggerth, Hungarian silent film actress (b. 1912)

Nobel Prizes

Chemistry – Martin Karplus, Michael Levitt, and Arieh Warshel

Economics – Eugene Fama, Lars Peter Hansen and Robert J. Shiller

Literature – Alice Munro

Peace – Organisation for the Prohibition of Chemical Weapons

Physics – François Englert and Peter Higgs

Physiology or Medicine – James E. Rothman, Randy W. Schekman, and Thomas C. Südhof

International years

2010 – International Year of Communications

2010 – International Year for the Rapprochement of Cultures

2010 – International Year of Biodiversity

2010 – International Year of Youth

2011 – International Year of Forests

2011 – International Year of Advanced Skills

2011 – International Year of Chemistry, recognized by UNESCO

2011 – International Year for People of African descent

2011 – World Veterinary Year 2011

2012 – International Year of Cooperatives

2012 – International Year of Sustainable Energy for All

2013 – **International Year of Water Cooperation**

2013 – **International Year of Quinoa**

2013 – **International Year of Statistics (Statistics2013)**

2014 – International Year of Family Farming

2014 – International Year of Crystallography

International Decades

1976–1985 – United Nations Decade for Women, recognized by the UN

1990s – International Decade for Natural Disaster Reduction

1994–2004 – First International Decade of the World's Indigenous People, recognized by the UN

1997–2006 – First United Nations Decade for the Eradication of Poverty, recognized by the UN

2000–2010 – Second International Decade for the Eradication of Colonialism, recognized by the UN

2000–2010 – Bone and Joint Decade, recognized by WHO

2001–2010 – International Decade for a Culture of Peace and Non-violence for the Children of the World , recognized by the UN

2001–2010 – Decade to Roll Back Malaria in Developing Countries, Particularly in Africa (2001–2010), recognized by the UN

2003–2012 – United Nations Literacy Decade, recognized by the UN

2005–2014 – United Nations Decade of Education for Sustainable Development, recognized by the UN

2005–2014 – Second International Decade of the World's Indigenous People, recognized by the UN

2005–2015 – Water for Life Decade, recognized by the UN

2010–2020 – United Nations Decade for Deserts and the Fight Against Desertification, recog-nized by the UN

2011–2020 – United Nations Decade on Biodiversity, recognized by the UN; Third International Decade for the Eradication of Colonialism, recognized by the UN; Decade of Action for Road Safety, recognized by the UN

Environmental Days

<i>Name</i>	<i>Date</i>
World Wetlands Day	02-02: February 2
International Day Of Action for Rivers	03-14: March 14
World Sparrow Day	03-20: March 20
World Planting Day	03-20: March 21
World Water Day	03-22: March 22
Earth Day	04-22: April 22
Arbor Day	04: Last Friday in April (each state also has its own observation based on best tree planting time)
Day of Remembrance for all Victims of Chemical Warfare	04-29: April 29
Green Up Day	05: first Saturday of May in Vermont
International Migratory Bird Day	05-03: May 3
Greenery Day	05-04: May 4 in Japan (previously April 29)
International Day for Biological Diversity (World Biodiversity Day)	05-22: May 22
Europarc European day of parks	05-24: May 24
Bike-to-Work Day	05: Third Friday in May
World Environment Day	06-05: June 5
World Oceans Day	06-08: June 8
Global Wind Day	06-15: June 15
World Day to Combat Desertification and Drought	06-17: June 17
World Population Day	07-11: July 11
International Tiger Day	07-29: July 29
International Day for the Preservation of the Ozone Layer	09-16: September 16
Clean Up the World	09-17 to 09-19: Weekend - Septem-ber 17-19
World Water Monitoring Day	09-18: September 18
Zero Emissions Day	09-21: September 21
Car Free Day	09-22: September 22
Ecological Debt Day (Earth Overshoot Day)	09-23: September 23 in 2008, but re-ceding
World Environmental Health Day	09-26: September 26 since 2011 (IFEH)
World Rivers Day	09: every last Sunday in September
World Habitat Day	10: first Monday in October
International Day for Natural Disaster Reduction	10: second Wednesday in October
International Day of Climate Action	10-24: October 24
International Day for Preventing the Exploitation of the Environment in War and Armed Conflict	11-06: November 6
America Recycles Day	11-15: November 15
World Soil Day	12-05: December 5
International Mountain Day	12-11: December 11
Ozone Action Day	at certain times during the summer months
eDay	variable date

Commemorative days

January

New Year's Day - January 1

Robbie Burns Day - January 25

Indian Republic Day - January 26

Street Children's Day - January 31

Martin Luther King, Jr. Day – 3rd Monday of January

February

World Cancer Day - February 4

Sri Lanka Independence Day - February 4

International Day of Zero Tolerance to Female Genital Mutilation - February 6

Darwin Day – February 12

Hug Day - February 13

Valentine's Day – February 14

International Mother Language Day – February 21

Thinking Day - February 22

National Science Day – February 28

Washington's Birthday - third Monday of February

March

Saint David's Day - March 1 (Wales)

Texas Independence Day – March 2

International Women's Day – March 8

Pi Day – March 14

World Consumer Rights Day – March 15

Saint Patrick's Day – March 17

World Sparrow Day – March 20

International Day for the Elimination of Racial Discrimination – March 21

World Down Syndrome Day- March 21

World Poetry Day – March 21

World Water Day - March 22

Youm-e-Pakistan (Pakistan Day) - March 23

World Tuberculosis Day - March 24

Purple Day - March 26

Bangladesh Independence Day – March 26

April

April Fools' Day - April 1

World Autism Awareness Day - April 2

World Health Day; National Beer Day - April 7

International Romani Day - April 8

Day of Silence; Day of Dialogue - April 15

Foursquare Day - April 16

World Hemophilia Day - April 17

Earth Day - April 22

St George's Day; World Book Day April 23

ANZAC Day; Italy's Liberation Day; World Malaria Day - April 25

World Intellectual Property Day - April 26

International Jazz Day - April 30

May

International Workers' Day - May 1

May Day - May 1

World Press Freedom Day - May 3

Remembrance of the Dead - May 4

Star Wars Day - May 4

Greenery Day - May 4

International Midwives' Day - May 5

International No Diet Day - May 6

Victory in Europe Day - May 7⁄8

Military Spouse Appreciation Day - May 11

International Nurses Day - May 12

International Day of Families - May 15

International Day Against Homophobia and Transphobia - May 17

World Information Society Day - May 17

International Day for Biological Diversity - May 22

International Missing Children's Day - May 25

Towel Day - May 25

Mother's Day – Second Sunday of May in many nations

June

National Cancer Survivors Day - June 1

World Environment Day - June 5

D-Day - June 6

World Oceans Day - June 8

World Blood Donor Day - June 14

Autistic Pride Day - June 18

World Refugee Day - June 20

World Hydrography Day - June 21

World Music Day - June 21

International Day against Drug Abuse and Illicit Trafficking - June 26

Father's Day – Third Sunday of June in the U.S., United Kingdom and others

Queen's Official Birthday – first, second or third Saturday in June

July

Independence Day (United States) - July 4

World Population Day - July 11

International Tiger Day - July 29

August

Friendship Day - August 4

International cat day - August 8

International Youth Day - August 12

International Lefthanders Day - August 13

Victory over Japan Day - August 14/15

Youm-e-Azadi (Pakistan Independence Day) - August 14

Indian Independence Day - August 15

Bennington Battle Day - August 16

Indonesian Independence Day - August 17

World Mosquito Day - August 20

Indian Akshay Urja Day - August 20

European Day of Remembrance for Victims of Stalinism and Nazism – August 23

September

Labor Day (US) - First Monday of the month

Brazilian Independence Day - September 7

Engineer's Day - September 15

International Talk Like a Pirate Day - September 19

European Day of Languages - September 26

World Contraception Day - September 26.

October

World Vegetarian Day – October 1

German Unity Day – October 3

World Animal Day – October 4

German-American Day – October 6

National Hug Day — October 8

World Mental Health Day - October 10

Pregnancy and Infant Loss Remembrance Day - October 15

World Food Day - October 16

Mole Day – October 23

National Cat Day – October 29

Halloween – October 31

November

World Vegan Day – November 1

All Saints' Day – November 1

All Souls' Day – November 2

Bonfire Night (also Guy Fawkes Night) – November 5

Armistice Day (also Remembrance Day) – November 11

Veterans Day – November 11

Children's Day (India) – November 14

Diabetes Day – November 14

International Men's Day – November 19

World Toilet Day - November 19

Transgender Day of Remembrance – November 20

Cities for Life Day – November 30

Thanksgiving (United States) – Fourth Thursday of November

Melbourne Cup Day – 1st Tuesday in November

December

World AIDS Day – December 1

United Nations' International Day of Persons with Disabilities – December 3

International Volunteer Day - December 5

Human Rights Day - December 10

Christmas Eve - December 24

Christmas Day – December 25

Quaid-e-Azam Muhammad Ali Jinnah Day - December 25 (Birthday of the founder of Pakistan)

Boxing Day – December 26

Kwanzaa – December 26 to January 1

New Year's Eve - December 31

North Korean nuclear program

The North Korean nuclear program can roughly be divided into four phases. Phase I (1956–80) dealt primarily with training and gaining basic knowledge. Phase II (1980–94) covers the growth and eventual suspension of North Korea's domestic plutonium production program. Phase III (1994–2002) covers the period of the "nuclear freeze" and Phase IV (2002–present) covers the current period of renewed nuclear activities.

Phase I

1956: The Soviet Union begins training North Korean scientists and engineers, giving them “basic knowledge” to initiate a nuclear program.

1958: The U.S. deploys nuclear armed Honest John missiles and 280mm atomic cannons to South Korea.

1959: North Korea and the USSR sign a nuclear cooperation agreement.

1962: The Yongbyon Nuclear Scientific Research Center opens.

1965: The Yongbyon IRT-2000 research reactor reaches a power rating of 2MW.

1974: The Yongbyon IRT-2000 research reactor reaches a power rating of 4MW.

Between the late 1970s and early 80's North Korea begins uranium mining operations at various locations near Sunchon and Pyongsan.

Phase II

1980-85: North Korea builds a factory at Yongbyon to refine yellowcake and produce fuel for reactors.

1984: The DPRK completes construction of a “Radiochemical laboratory” which is actually a reprocessing plant used to separate plutonium from spent nuclear fuel at the Yongbyon site.

1984-1986: North Korea completes construction on a 5MWe gas-cooled, graphite moderated nuclear reactor for plutonium production. North Korea also commences with the construction of a second 50MWe nuclear reactor.

1987: The Yongbyon IRT-2000 research reactor reaches a power rating of 8MW.

1989: Soviet control of communist governments throughout Europe begins to weaken and the Cold War comes to a close. Post-Soviet states emerge in Eastern Europe and Central Asia. As the USSR's power declines, North Korea loses the security guarantees and economic support that had sustained it for 45 years.

Through satellite photos, the U.S. learns of new construction at a nuclear complex near the North Korean town of Yongbyon. U.S. intelligence analysts suspect that North Korea, which had signed the Nuclear Non-Proliferation Treaty (NPT) in 1985 but had not yet allowed inspections of its nuclear facilities, is in the early stages of building an atomic bomb.

In response, the U.S. pursues a strategy in which North Korea's full compliance with the NPT would lead to progress on other diplomatic issues, such as the normalization of relations.

1991: The U.S. withdrew its last nuclear weapons from South Korea in December 1991, though U.S. affirmation of this action was not clear, resulting in rumors persisting that nuclear weapons remained in South Korea. The U.S. had deployed nuclear weapons in South Korea since January 1958, peaking in number at some 950 warheads in 1967.

1992: In May, for the first time, North Korea allows a team from the International Atomic Energy Agency (IAEA). The Agency inspection finds inconsistencies with North Korea declarations Hans Blix head of the IAEA and the U.S. suspect that North Korea is secretly using its five-megawatt reactor and reprocessing facility at Yongbyon to turn spent fuel into weapons-grade plutonium. Before leaving, Blix arranges for fully equipped inspection teams to follow.

The inspections do not go well. Over the next several months, the North Koreans repeatedly block inspectors from visiting two of Yongbyon's suspected nuclear waste sites and IAEA inspectors find evidence that the country is not revealing the full extent of its plutonium production.

1993: In March, North Korea threatens to withdraw from the NPT. Facing heavy domestic pressure from Republicans who oppose negotiations with North Korea, President Bill Clinton appoints Robert Gallucci to start a new round of negotiations. After 89 days, North Korea announces it has suspended its withdrawal. (The NPT requires three months notice before a country can withdraw.)

In December, IAEA Director-General Blix announces that the agency can no longer provide "any meaningful assurances" that North Korea is not producing nuclear weapons.

12 October 1994: the United States and North Korea signed the "Agreed Framework": North Korea agreed to freeze its plutonium production program in exchange for fuel oil, economic cooperation, and the construction of two modern light-water nuclear power plants. Eventually, North Korea's existing nuclear facilities were to be dismantled, and the spent reactor fuel taken out of the country.

26 October 1994: IAEA Chairman Hans Blix tells the British House of Commons' Foreign Affairs Select Committee the IAEA is "not very happy" with the Agreed Framework because it gives North Korea too much time to begin complying with the inspections regime.

Phase III

18 March 1996: Hans Blix tells the IAEA's Board of Governors North Korea has still not made its initial declaration of the amount of plutonium they possess, as required under the Agreed Framework, and warned that without the declaration IAEA would lose the ability to verify North Korea was not using its plutonium to develop weapons.

October 1997: spent nuclear fuel rods were encased in steel containers, under IAEA inspection.

31 August 1998: North Korea launched a modified Taepodong-1 missile in a launch attempt of its Kwangmyo(ngso(ng-1 satellite. U.S. military analysts suspect satellite launch is a ruse for the testing of an ICBM. This missile flew over Japan causing the Japanese government to retract 1 billion in aid for two civilian light-water reactors.

2002

29 January: U.S. President George W. Bush in his State of the Union Address named North Korea as part of the axis of evil, arming to threaten the peace of the world and posing a grave danger.

7 August: "First Concrete" pouring at the construction site of the light-water nuclear power plants being built by the Korean Peninsula Energy Development Organization under the 1994 Agreed Framework. Construction of both reactors was many years behind the agreement's target completion date of 2003.

17 September: Japanese Prime Minister Junichiro Koizumi becomes the first Japanese prime minister to visit Pyongyang, making a number of political and cooperative offers. This support for the Sunshine Policy was seen by some in the U.S. as a threat to American influence in Korea.

3–5 October: On a visit to the North Korean capital Pyongyang, US Assistant Secretary of State James Kelly presses the North on suspicions that it is continuing to pursue a nuclear energy and missiles programme. Mr Kelly says he has evidence of a secret uranium-enriching programme carried out in defiance of the 1994 Agreed Framework. Under this deal, North Korea agreed to forsake nuclear ambitions in return for the construction of two safer light water nuclear power reactors and oil shipments from the US.

16 October: The US announces that North Korea admitted in their talks to a secret nuclear arms programme.

17 October: Initially the North appears conciliatory. Leader Kim Jong-il says he will allow international weapons inspectors to check that nuclear facilities are out of use.

20 October: North-South Korea talks in Pyongyang are undermined by the North's nuclear programme "admission". US Secretary of State Colin Powell says further US aid to North Korea is now in doubt. The North adopts a mercurial stance, at one moment defiantly defending its "right" to weapons development and at the next offering to halt nuclear programmes in return for aid and the signing of a "non-aggression" pact with the US. It argues that the US has not kept to its side of the Agreed Framework, as the construction of the light water reactors - due to be completed in 2003 - is now years behind schedule.

14 November: US President George W Bush declares November oil shipments to the North will be the last if the North does not agree to put a halt to its weapons ambitions.

18 November: Confusion clouds a statement by North Korea in which it initially appears to acknowledge having nuclear weapons. A key Korean phrase understood to mean the North does have nuclear weapons could have been mistaken for the phrase "entitled to have", Seoul says.

27 November: The North accuses the US of deliberately misinterpreting its contested statement, twisting an assertion of its "right" to possess weapons into an "admission" of possession.

December: South Korean presidential election. The Grand National Party, who opposed the Sunshine Policy, made much of the North Korean situation, although it eventually lost the election.

4 December: The North rejects a call to open its nuclear facilities to inspection.

11 December: North Korean-made Scud missiles are found aboard a ship bound for Yemen. The US illegally detains the ship, but is later forced to allow the ship to go, conceding that neither country has broken any law.

12 December: The North pledges to reactivate nuclear facilities for energy generation, saying the Americans' decision to halt oil shipments leaves it with no choice. It claims the US wrecked the 1994 pact.

13 December: North Korea asks the UN's International Atomic Energy Agency (IAEA) to remove seals and surveillance equipment - the IAEA's "eyes and ears" on the North's nuclear status - from its Yongbyon power plant.

22 December: The North begins removing monitoring devices from the Yongbyon plant.

24 December: North Korea begins repairs at the Yongbyon plant. North-South Korea talks over reopening road and rail border links, which have been struggling on despite the increased tension, finally stall.

25 December: It emerges that North Korea had begun shipping fuel rods to the Yongbyon plant which could be used to produce plutonium.

26 December: The IAEA expresses concern in the light of UN confirmation that 1,000 fuel rods have been moved to the Yongbyon reactor.

27 December: North Korea says it is expelling the two IAEA nuclear inspectors from the country. It also says it is planning to reopen a reprocessing plant, which could start producing weapons grade plutonium within months.

Phase IV

2003

2 January: South Korea asks China to use its influence with North Korea to try to reduce tension over the nuclear issue, and two days later Russia offers to press Pyongyang to abandon its nuclear programme.

6 January: The IAEA passes a resolution demanding that North Korea readmit UN inspectors and abandon its secret nuclear weapons programme "within weeks", or face possible action by the UN Security Council.

7 January: The US says it is "willing to talk to North Korea about how it meets its obligations to the international community". But it "will not provide quid pro quos to North Korea to live up to its existing obligations".

9 January: North Korea sends diplomats to meet with New Mexico governor Bill Richardson about the nuclear crisis; North Korea also agrees to hold cabinet-level talks with South Korea on 21 January.

10 January: North Korea announces it will withdraw from the Nuclear Non-Proliferation Treaty.

20 January: US Secretary of State Colin Powell calls on the IAEA to refer the North Korean nuclear issue to the United Nations Security Council for resolution.

21 January: Diplomatic talks commence between cabinet-level officials from both North Korea and South Korea; the North is represented by Kim Ryong Song.

24 January: Cabinet-level talks between North and South Korea end without making progress.

South Korean President-elect Roh Moo-hyun proposes face-to-face meeting with Kim Jong-il.

28 January: In his annual State of the Union address, President Bush alleges North Korea is "an oppressive regime [whose] people live in fear and starvation". He accuses North Korea of deception over its nuclear ambitions and says "America and the world will not be blackmailed".

29 January: North Korea says Mr Bush's speech is an "undisguised declaration of aggression to topple the DPRK system" and dubs him a "shameless charlatan". At the same time, however, it reiterates its demand for bilateral talks on a non-aggression pact.

31 January: Unnamed American officials are quoted as saying that spy satellites have tracked movement at the Yongbyon plant throughout January, prompting fears that North Korea is trying to reprocess plutonium for nuclear bombs.

White House spokesman Ari Fleischer delivers a stern warning that North Korea must not take "yet another provocative action... intended to intimidate and blackmail the international community".

4 February: The United States says it is considering new military deployments in the Pacific Ocean to back up its forces in South Korea, as a deterrent against any North Korean aggression, in the event that the US unleashes aggression on Iraq.

5 February: North Korea says it has reactivated its nuclear facilities and their operations are now going ahead "on a normal footing".

6 February: North Korea warns the United States that any decision to build up its troops in the region could lead the North to make a pre-emptive attack on American forces.

12 February: The IAEA finds North Korea in breach of nuclear safeguards and refers the matter to the UN security council.

16 February: Kim Jong-il celebrates his 61st birthday, but state media warns North Korean citizens to be on "high alert".

17 February: The US and South Korea announce that they will hold joint military exercises in March.

24 February: North Korea fires a missile into the sea between South Korea and Japan.

25 February: Roh Moo-hyun sworn in as South Korean president.

2 March: Four North Korean fighter jets intercept a US reconnaissance plane in international air space and shadow it for 22 minutes.

10 March: North Korea fires a second missile into the sea between South Korea and Japan in as many weeks.

22 March: As a blistering bombing campaign pounds the Iraqi capital, and South Korean and US forces perform military exercises on its doorstep, a jumpy North denounces their "confrontational posture" and calls off talks with the South.

1 April: The US announces that "stealth" fighters sent to South Korea for a training exercise are to stay on once the exercises end.

7 April: Ministerial talks between North and South Korea are cancelled after Pyongyang fails to confirm they would take place.

9 April: The United Nations Security Council expresses concern about North Korea's nuclear programme, but fails to condemn Pyongyang for pulling out of the Nuclear Non-proliferation Treaty.

12 April: In a surprise move, North Korea signals it may be ready to end its insistence on direct talks with the US, announcing that "if the US is ready to make a bold switchover in its Korea policy for a settlement of the nuclear issue, [North Korea] will not stick to any particular dialogue format".

18 April: North Korea announces that it has started reprocessing its spent fuel rods. The statement is later amended to read that Pyongyang has been "successfully going forward to repro-

cess" the rods.

23 April: Talks begin in Beijing between the US and North Korea, hosted by China. The talks are led by the US Assistant Secretary of State for East Asian affairs, James Kelly, and the deputy director general of North Korea's American Affairs Bureau, Li Gun.

24 April: American officials say Pyongyang has told them that it now has nuclear weapons, after the first direct talks for months between the US and North Korea in Beijing end a day early.

25 April: Talks end amid mutual recrimination, after the US says North Korea had made its first admission that it possessed nuclear weapons.

28 April: US Secretary of State Colin Powell says North Korea made an offer to US officials, during the talks in Beijing, to scrap its nuclear programme in exchange for major concessions from the United States. He does not specify what those concessions are, but reports say that Pyongyang wants normalised relations with the US and economic assistance. Mr Powell says Washington is studying the offer.

5 May: North Korea demands the US respond to what it terms the "bold proposal" it made during the Beijing talks.

12 May: North Korea says it is scrapping a 1992 agreement with the South to keep the peninsula free from nuclear weapons - Pyongyang's last remaining international agreement on non-proliferation.

15 May: South Korean President Roh Moo-hyun meets US President George W Bush in Washington for talks on how to handle North Korea's nuclear ambitions.

2 June: A visiting delegation of US congressmen led by Curt Weldon says North Korean officials admitted the country had nuclear weapons had "just about completed" reprocessing 8,000 spent fuel rods which would allow it to build more.

9 June: North Korea says publicly that it will build a nuclear deterrent, "unless the US gives up its hostile policy".

13 June: South Korea's Yonhap news agency says North Korean officials told the US on 30 June that it had completed reprocessing the fuel rods.

18 June: North Korea says it will "put further spurs to increasing its nuclear deterrent force for self-defence".

9 July: South Korea's spy agency says North Korea has started reprocessing a "small number" of the 8,000 spent nuclear fuel rods at Yongbyon.

1 August: North Korea agrees to six-way talks on its nuclear programme, South Korea confirms. The US, Japan, China and Russia will also be involved.

27–29 August: Six-nation talks in Beijing on North Korea's nuclear programme. The meeting fails to bridge the gap between Washington and Pyongyang. Delegates agree to meet again.

2 October: North Korea announces publicly it has reprocessed the spent fuel rods.

16 October: North Korea says it will "physically display" its nuclear deterrent.

30 October: North Korea agrees to resume talks on the nuclear crisis, after saying it is prepared to consider the US offer of a security guarantee in return for ending its nuclear programme.

21 November: Kedo, the international consortium formed to build 'tamper-proof' nuclear power plants in North Korea, decides to suspend the project.

9 December: North Korea offers to "freeze" its nuclear programme in return for a list of concessions from the US. It says that unless Washington agrees, it will not take part in further talks. The US rejects North Korea's offer. President George W Bush says Pyongyang must dismantle the programme altogether.

27 December: North Korea says it will take part in a new round of six-party talks on its nuclear programme in early 2004.

2004

2 January: South Korea confirms that the North has agreed to allow a group of US experts, including a top nuclear scientist, visit Yongbyon nuclear facility.

10 January: The unofficial US team visits the North's "nuclear deterrent" facility at Yongbyon.

22 January: US nuclear scientist Siegfried Hecker tells Congress that the delegates visiting Yongbyon were shown what appeared to be weapons-grade plutonium, but he did not see any evidence of a nuclear bomb.

3 February: North Korea reports that the next round of six-party talks on the nuclear crisis will be held on 25 February.

25 February: Second round of six nation talks end without breakthrough in Beijing.

23 May: The UN atomic agency is reported to be investigating allegations that North Korea secretly sent uranium to Libya when Tripoli was trying to develop nuclear weapons.

23 June: Third round of six nation talks held in Beijing, with the US making a new offer to allow North Korea fuel aid if it freezes then dismantles its nuclear programmes.

2 July: US Secretary of State Colin Powell meets the North Korean Foreign Minister, Paek Nam-sun, in the highest-level talks between the two countries since the crisis erupted.

24 July: North Korea rejects US suggestions that it follow Libya's lead and give up its nuclear ambitions, calling the US proposal a daydream.

3 August: North Korea is in the process of developing a new missile system for ships or submarines, according to a report in Jane's Defence Weekly.

23 August: North Korea describes US President George W Bush as an "imbecile" and a "tyrant that puts Hitler in the shade", in response to comments President Bush made describing the North's Kim Jong-il as a "tyrant".

12 September: Clinton Former Secretary of State Madeline Albright admits North Korean "cheating" on the Agreed Framework occurred during the "Clinton Watch."

28 September: North Korea says it has turned plutonium from 8,000 spent fuel rods into nuclear weapons. Speaking at the UN General Assembly, Vice Foreign Minister Choe Su-hon said the weapons were needed for "self-defence" against "US nuclear threat".

2005

14 January: North Korea says it is willing to restart stalled talks on its nuclear programme, according to the official KCNA news agency. The statement says North Korea "would not stand against the US but respect and treat it as a friend unless the latter slanders the former's system and interferes in its internal affairs".

19 January: Condoleezza Rice, President George W Bush's nominee as secretary of state, identifies North Korea as one of six "outposts of tyranny" where the US must help bring freedom.

10 February: North Korea says it is suspending its participation in the talks over its nuclear programme for an "indefinite period", blaming the Bush administration's intention to "antagonise, isolate and stifle it at any cost". The statement also repeats North Korea's assertion to have built nuclear weapons for self-defence.

18 April: South Korea says North Korea has shut down its Yongbyon reactor, a move which could allow it to extract more fuel for nuclear weapons.

1 May: North Korea fires a short-range missile into the Sea of Japan (East Sea of Korea), on the eve of a meeting of members of the international Non-Proliferation Treaty.

11 May: North Korea says it has completed extraction of spent fuel rods from Yongbyon, as part of plans to "increase its nuclear arsenal".

16 May: North and South Korea hold their first talks in 10 months, with the North seeking fertilizer for its troubled agriculture sector.

25 May: The US suspends efforts to recover the remains of missing US servicemen in North Korea, saying restrictions placed on its work were too great.

7 June: China's envoy to the UN says he expects North Korea to rejoin the six-nation talks "in the next few weeks".

22 June: North Korea requests more food aid from the South during ministerial talks in Seoul, the first for a year.

9 July: North Korea says it will rejoin nuclear talks, as US Secretary of State Condoleezza Rice begins a tour of the region.

12 July: South Korea offers the North huge amounts of electricity as an incentive to end its nuclear weapons programme.

25 July: Fourth round of six-nation talks begins in Beijing.

7 August: The talks reach deadlock and a recess is called.

13 September: Talks resume. North Korea requests the building of the light-water reactors promised in the Agreed Framework, but the U.S. refuses, prompting warnings of a "standoff" between the parties.

19 September: In what is initially hailed as an historic joint statement, North Korea agrees to give up all its nuclear activities and rejoin the nuclear Non-Proliferation Treaty, while the US says it had no intention of attacking.

20 September: North Korea says it will not scrap its nuclear programme until it is given a civilian nuclear reactor, undermining the joint statement and throwing further talks into doubt.

7 December: A senior US diplomat brands North Korea a "criminal regime" involved in arms sales, drug trafficking and currency forgery.

20 December: North Korea says it intends to resume building nuclear reactors, because the US had pulled out of a key deal to build it two new reactors.

2006

12 April: A two-day meeting aimed at persuading North Korea to return to talks on its nuclear programme fails to resolve the deadlock.

26 June: A report by the Institute for Science and International Security estimates that current North Korea plutonium stockpiles is sufficient for four to thirteen nuclear weapons.

3 July: Washington dismisses a threat by North Korea that it will launch a nuclear strike against the US in the event of an American attack, as a White House spokesman described the threat as "deeply hypothetical".

4 July: North Korea test-fires at least six missiles, including a long-range Taepodong-2, despite repeated warnings from the international community.

5 July: North Korea test-fires a seventh missile, despite international condemnation of its ear-lier launches.

6 July: North Korea announces it would continue to launch missiles, as well as "stronger steps", if international countries were to apply additional pressure as a result of the latest missile launches, claiming it to be their sovereign right to carry out these tests. A US television network also reports that they have quoted intelligence sources in saying that North Korea is readying another Taepodong-2 long-range missile for launch.

3 October: North Korea announces plans to test a nuclear weapon in the future, blaming "hos-tile US policy."

5 October: A US envoy directly threatens North Korea as to the upcoming test, stating "It (North Korea) can have a future or it can have these (nuclear) weapons, it cannot have them both." The envoy also mentions that any attempt to test a nuclear device would be seen as a "highly pro-vocative act."

6 October: The United Nations Security Council issues a statement declaring, "The Security Council urges the DPRK not to undertake such a test and to refrain from any action that might aggravate tension, to work on the resolution of non-proliferation concerns and to facilitate a peaceful and comprehensive solution through political and diplomatic efforts. Later in the day, there are unconfirmed reports of the North Korean government successfully testing a nuclear bomb."

9 October: North Korea announces that it has performed its first-ever nuclear weapon test. The country's official Korean Central News Agency said the test was performed successfully and there was no radioactive leakage from the site. South Korea's Yonhap news agency said the test was conducted at 10:36 a.m. (1:36 a.m. GMT) in Hwaderi near Kilju city, citing defense officials. The USGS detected an earthquake with a preliminary estimated magnitude of 4.2 at 41.311°N, 129.114°E . The USGS coordinate indicates that the location in much north of Hwaderi, near the upper stream of Oran-chon, 17 km NNW of Punggye-Yok, according to analysts reports. In an interview on The Daily Show with Jon Stewart, former Secretary of State James Baker let it slip that North Korea "... had a rudimentary nuclear weapon way back in the days when I was Secre-tary of State, but now this is a more advanced one evidently." He was Secretary of State be-tween 1989 and 1992.

10 October: Some western scientists had doubts as to whether the nuclear weapon test that took place on 9 October 2006 was in fact successful. The scientists cite that the measurements recorded only showed an explosion equivalent to 500 metric tons of TNT, as compared to the 1998 nuclear tests that India and Pakistan conducted which were from between 24 - 50 times more powerful. This could indicate that the test resulted in a fizzle. Some also speculated that the test may be a ruse using conventional explosives and nuclear material.

14 October: The United Nations Security Council passed U.N. Resolution 1718, imposing sanc-tions on North Korea for its announced nuclear test on 9 October 2006 that include largely symbolic steps to hit the North Korea's nuclear and missile programs, a reiteration of financial sanctions that were already in place, as well as keeping luxury goods away from its leaders, for example French wines and spirits or jet skis. However, the sanctions do not have the full sup-port of China and Russia. The resolution was pushed in large part by the administration of George W. Bush, whose party at the time was engaged in an important mid-term election.

27 October: Japanese Chief Cabinet Secretary Yasuhisa Shiozaki, based upon U.S. intelligence, announces, "We reached the conclusion that the probability that North Korea conducted a nuclear test is extremely high." He continued on to admit that Japanese aircraft could not con-firm the U.S. and South Korean reports.

18 December: The six-party talks resume in what is known as the fifth round, second phase. After a week of negotiations, the parties managed to reaffirm the September 19th declaration, as well as reiterate their parties' stances. For more information, see six-party talks.

2007

13 January: North Korean official Song Il-ho was reported to have told his Japanese counterpart Taku Yamasaki that whether the North Koreans conduct a second nuclear test depends on "US actions in the future".

16 January: In-between-round talks between North Korea and the US are held in Berlin, Ger-many. Certain areas of agreement have been reached, as confirmed by both sides. North Korea claims these were bilateral negotiations; the US claims these "set the groundwork for the next round of six-party talks".

26 January: On 26 January 2007, Russian chief negotiator Alexander Losyukov told reporters that the third phase was most likely to take place in late January or early February 2007, most likely 5–8 February 2007, before the Lunar New Year.

10 February: Reports emanating from Washington suggest that the CIA reports in 2002 that North Korea was developing uranium enrichment technology overstated or misread the intelli-gence. U.S. officials are no longer making this a major issue in the six-party talks.

13 February: The fifth round of the six-party talks conclude with an agreement. Pyongyang promises to shut down the Yongbyon reactor in exchange for 50,000 metric tons of fuel aid, with more to follow upon verification that the site has been permanently disabled. IAEA inspec-tors will be re-admitted, and the United States will begin the process of normalizing relations with North Korea.

19 March: The sixth round of six-party talks commences in Beijing.

25 June: North Korea announces resolution of the banking dispute regarding US\$25 million in DPRK assets in Macau's Banco Delta Asia.

14 July: North Korea announces it is shutting down the Yongbyon reactor after receiving 6,200 tons in South Korean fuel oil aid.

17 July: A 10-person team of IAEA inspectors confirms that North Korea has shut down its Yongbyon reactor, a step IAEA Director Mohamed ElBaradei said was "a good step in the right direction". On the same day, a second shipment of 7,500 tons of oil aid was dispatched from South Korea for the North Korea city of Nampo, part of the 50,000 tons North Korea is due to receive in exchange for shutting down the reactor, according to the February 13 agreement.

11–13 September: Inspectors from the United States, China and Russia conduct a site visit at Yongbyon reactor to determine ways to permanently disable the reactor. U.S. delegation leader, Sung Kim, declared they "saw everything they had asked to see," State Department spokesman Sean McCormack said.

2008

25 February: CNN chief international correspondent Christiane Amanpour toured North Korea's nuclear plant. CNN was one of only two U.S. news organizations at the facility.

10 May: Sung Kim, the U.S. State Department's top Korea specialist, returned to South Korea by land across the heavily fortified border after collecting approximately 18,000 secret papers of Yongbyon nuclear reactor activities during a three-day visit to Pyongyang.

26 June: North Korea hands over 60 pages of documents detailing its capabilities in nuclear

power and nuclear weapons.

27 June: North Korea destroys a cooling tower at Yongbyon's main atomic reactor.

11 October: The US removes North Korea from its State Sponsors of Terrorism list.

2009

5 April: North Korea's launch of its Kwangmyo(ngso(ng-2 satellite, intended to broadcast "im-mortal revolutionary songs," ends in failure.

14 April: Following a UN resolution denouncing its missile launch, North Korea says that it "will never again take part in such [six party] talks and will not be bound by any agreement reached at the talks." North Korea expelled nuclear inspectors from the country and also informed the IAEA that they would resume their nuclear weapons program.

25 April: North Korea says it has reactivated its nuclear facilities.

25 May: North Korea tests its second nuclear device.

2012

April: North Korea prepares to test its third nuclear device.

13 April: North Korea's launch of its Kwangmyo(ngso(ng-3 satellite.

12 December: North Korea's launch of its Kwangmyo(ngso(ng-3 Unit 2 satellite.

2013

5 February: South Korea's President warned that North Korea could be planning "multiple nuclear tests at two places or more".

12 February: North Korea tests its third nuclear device.

March–April: North Korea crisis (2013)

ESA probe to make closest flyby of Mars on Dec 29

The European Space Agency's Mars Express spacecraft will make the closest flyby ever of the red planet's largest moon Phobos this week, skimming past it at a touching distance of 45 km. The flyby on December 29 will be so close and fast that Mars Express will not be able to take any images, but instead it will yield the most accurate details yet of the Phobos's gravitational field and, in turn, provide new details of its internal structure, ESA said.

As the spacecraft passes close to Phobos, it will be pulled slightly off course by the moon's gravity, changing the spacecraft's velocity by no more than a few centimetres per second. These small deviations will be reflected in the spacecraft's radio signals as they are beamed back to Earth, and scientists can then translate them into measurements of the mass and den-sity structure inside the moon.



Earlier flybys, including the previous closest approach of 67 km in March 2010, have already suggested that the moon could be between a quarter and a third empty space essentially a rubble pile with large spaces between the rocky blocks that make up the moon's interior.

Knowing the structure of the roughly 27 x 22 x 18 km Phobos will help to solve a big mystery concerning its origin and that of its more distant sibling, Deimos, which orbits Mars at approxi-mately three times greater distance.

The leading theories propose that the duo are either asteroids captured by Mars, or that they were born from debris thrown up from giant impacts on Mars. "By making close flybys of Phobos with Mars Express in this way, we can help to put constraints on the origin of these mysterious moons," said Olivier Witasse, ESA's Mars Express project scientist.

In addition to probing the gravitational field of Phobos during its close approach, Mars Express will be making measurements of how the solar wind influences the moon's surface.

"At just 45 km from the surface, our spacecraft is passing almost within touching distance of Phobos," said Michel Denis, Mars Express Operations Manager. "We've been carrying out manoeuvres every few months to put the spacecraft on track and, together with the ground stations that will be monitoring it on its close approach, we are ready to make some extremely accurate measurements at Phobos," said Denis.

Both the position of the spacecraft and the moon must be known to high precision in order to make the most accurate calculations of the moon's internal characteristics.

Furthermore, ground stations around the world will track the spacecraft for a total of 35 hours in the lead up to, during, and after the flyby to ensure that the position of Mars Express is precisely known.

"Mars Express entered orbit around the Red Planet exactly ten years ago this week this close flyby of Phobos is certainly an exciting way to celebrate!" said Olivier.

India Inc strikes 480 M&A deals for \$27.4 bn in 2013

Hit by sluggish economic trends, merger and acquisition activities of Indian companies slowed down in 2013 to a total of nearly 500 deals worth close to USD 30 billion, but the momentum is set to pick up in the New Year especially after the general elections.

In comparison, Indian companies were involved in 598 M&A deals worth USD 35.4 billion in 2012 and 644 transactions worth USD 44.6 billion a year ago in 2011, shows an analysis of data compiled by various deal-tracking firms.

While deal volumes have slipped for two consecutive years now, experts believe there is a lot of pent up demand for M&A transactions and the deal momentum is set to pick up in 2014.

Muted economic growth projections and uncertainty over policies held back M&A transac-tions, and deals are now taking longer to close because of macroeconomic concerns.

According to Grant Thornton, there have been a total of 480 deals amounting to USD 27.4 billion during 2013 involving Indian companies, as on 13th December 2013. A few more deals have been announced since then.

Global deal-tracking firm mergermarket's India Bureau Chief Mithun Varkey said deals would be mostly driven by local consumption story, especially in sectors like consumer durables and phar-maceuticals, during 2014. "A revival in core sectors such as in power, road and infrastructure sectors still seem unlikely as due to lack of investor confidence," he said.

Moreover, the upcoming general elections are also holding many deals back, as many investors and dealmakers prefer to wait and watch. "We expect subdued activity in the first quarter of 2014 and then based on the election results and market sentiment we believe there would be a big uptick in M&A thereafter," said Harish HV, Partner, India Leadership Team of Grant Thornton.

According to Vikram Utamsingh, Managing Director, Transaction Advisory services, Alvarez & Marsal India, there are several insights to the M&A deal tally of this year.

Firstly, both global buyers and investors now believe that it is an opportune time to do deals in India as deals have become cheaper in dollar terms due to the sharp devaluation of the rupee

against the US dollar.

Secondly, global investors believe that the Indian economy is at the bottom of its economic cycle and with government elections in the New Year coupled with efforts by the present gov-ernment to increase growth, India should start growing at a higher rate from 2014.

Thirdly, valuations in some sectors like industry and auto have reached more reasonable levels for deals to get done.

"We could see several large transactions in the power and road industry where the large infra-structure conglomerates in India look to find ways to generate cash to reduce their incredibly high debt burdens. These assets, if already operational or near operational, will see interest from global players," Utamsingh said.

PwC India, Executive Director and Leader (Private Equity), Sanjeev Krishan, believes that "over-seas investors continued to be cagey (in 2013) about India, owing to the tax issues which sur-faced in 2012 and lack of any path-breaking policy moves".

The recovery in the US markets and the upturn in the European economies also meant that overseas investors focused on their home territories more than emerging markets including India, Krishan said.

The year 2013 has witnessed five deals valued at over a billion dollars each, and there were 36 deals valued at over a 100 million dollars each.

Topping the list, Unilever's stake hike in Hindustan Unilever was worth USD 3.1 billion, followed by ONGC's Rovuma oil block acquisitions for over USD 2.5 billion each.

According to data from mergermarket, domestic M&A deal value fell by almost 67 percent year-on-year in 2013.

In 2012, domestic deal value was at about USD 20.8 billion from 167 deals, but in 2013 it stood at about USD 7 billion from 140 deals.

Inbound deals fell to a total of 148 in 2013 from 172 in 2012.

Indonesia builds sanctuary to save world's rarest rhino

On a leaf-covered dirt path overlooking lush paddy fields in western Indonesia, the world's rarest rhino had left a trail of hoofprints in the soft mud and bite marks on foliage. For people seeking a glimpse of the Javan rhino - revered in local folklore as Abah Gede, or the Great Father - such small signs are likely to be the closest they get.

There are thought to be only around 50 of the animals left in existence, all living in the wild in Ujung Kulon National Park, an area of stunning natural beauty on the western tip of Indonesia's main island of Java.

But now conservationists are hoping that the country's first ever Javan rhino sanctuary, which will open in the park in the coming months, can pull the animal back from the brink of extinc-tion. The shy creature, whose folds of loose skin give it the appearance of wearing armour plating, once numbered in the thousands and roamed across Southeast Asia.

But, like other rhino species across the world, poaching and human encroachment on its habi-tat has led to a dramatic population decline, with the International Union for Conservation of Nature saying the animal is "making its last stand".

The new sanctuary will encompass 12,600 acres of lush rainforest, freshwater streams and mudholes in the park, which is a UNESCO World Heritage site. It is not due to open until March but park officials say that from hoofprints and bite marks, they believe nine rhinos have already wandered into new areas set aside for them.

"It means our scheme to turn this sanctuary into a comfortable home for them is working," the park's habitat manager Rusdianto, who like many Indonesians goes by one name. The rhinos were already living mainly in one corner of the park. But the new sanctuary has expanded the area suitable for them and relocated farmers who were living there to reduce the chances of animal-human conflict. An electric fence is also being constructed - the final piece of work that needs to be completed - to mark the boundary and prevent the rhinos from straying out of the sanctuary and humans from coming in.

Russia's Kalashnikov, designer of AK-47, dies

Mikhail Kalashnikov, the designer of fabled AK-47 automatic rifle, died on Monday, the office of the presidency in the Udmurtia region where he worked said. He was 94. Kalashnikov designed a weapon that became synonymous with killing on a sometimes indiscriminate scale but was seen in the Soviet Union as a national hero and symbol of Moscow's proud military past.

"He died about one-and-a-half hours ago," Viktor Chulkov, the spokesman for the Udmurtia leader Alexander Volkov, told a news agency on Monday.



Lavished with honours including the prestigious Hero of Russia prize for designing the iconic rifle, Kalashnikov has said he had never intended for it to become the preferred weapon in conflicts around the world.

"I created a weapon to defend the fatherland's borders. It's not my fault that it was sometimes used where it shouldn't have been. This is the fault of politicians," he said during an award ceremony at the Kremlin to mark his 90th birthday.

AK-47's name stands for "Kalashnikov's Automatic" and the year it was designed, 1947.

Also called the "Kalashnikov", the rifle and its variants are the weapons of choice for dozens of armies and guerrilla groups around the world.

More than 100 million Kalashnikov rifles have been sold worldwide and they are wielded by fighters in such far-flung conflict zones as Iraq, Afghanistan and Somalia.

But their inventor, a World War II veteran, has barely profited financially from them and lived modestly in Izhevsk, an industrial town 1,300 kilometres east of Moscow.

The Izmash factory that was the home manufacturer of the weapon in the central Russian re-gion of Udmurtia has now fallen on hard times after a collapse in orders following the fall of the USSR, a fact that prompted Kalashnikov to make a personal appeal to President Vladimir Putin.

Born in a Siberian village as the 17th child of family on 10th November 1919, Kalashnikov had a tragic childhood during which his father was deported under Soviet dictator Joseph Stalin in 1930. Wounded during combat in 1941, Kalashnikov designed his rifle in 1947, driven by Soviet defeats in the early years of World War II at the hands of far better armed German soldiers.

In October 1941 in fierce battles around Bryansk he was heavily wounded and shell-shocked. According to his official Izmash biography, Kalashnikov first conceived of the weapon while re-covering in hospital.

Gaia

an unmanned space observatory

C.S. Rajput

Gaia was launched by Arianespace, using a Soyuz ST-B rocket with a Fregat-MT upper stage, from the Ensemble de Lancement Soyouz at Kourou in French Guiana on 19 December 2013.

Gaia is an unmanned space observatory of the European Space Agency (ESA) designed for astrometry. The mission aims to compile a 3D space catalogue of approximately 1 billion astronomical objects (approximately 1% of the Milky Way population) brighter than 20 G magnitudes, where G is the Gaia magnitude pass-band between about 400 and 1000 nanometres light wavelengths. Successor to the Hipparcos mission, it is part of ESA's Horizon 2000 Plus long-term scientific program. Gaia will monitor each of its target stars about 70 times over a period of five years.

Gaia will create a precise three-dimensional map of stars throughout the Milky Way galaxy and map their motions, which encode the origin and subsequent evolution of the Milky Way. The spectrophotometric measurements will provide the detailed physical properties of each star observed, characterising their luminosity, effective temperature, gravity and elemental composition. This massive stellar census will provide the basic observational data to tackle a wide range of important questions related to the origin, structure and evolutionary history of our galaxy. Large numbers of quasars, galaxies, extrasolar planets and Solar System bodies will be measured at the same time.

Gaia was launched on 19 December 2013 by Arianespace using a Soyuz ST-B/Fregat-MT rocket flying from Kourou in French Guiana. The spacecraft will be operated in a Lissajous orbit around the Sun–Earth L2 Lagrangian point.

History

The Gaia space telescope has its roots in ESA's Hipparcos mission (1989–1993). Its mission was proposed in October 1993 by Lennart Lindegren (Lund University, Sweden) and Michael Perryman (ESA) in response to a call for proposals for ESA's Horizon Plus long-term scientific programme. It was adopted by ESA's Science Programme Committee as cornerstone mission number 6 on 13 October 2000, and the B2 phase of the project was authorised on 9 February 2006, with EADS Astrium taking responsibility for the hardware. The name 'GAIA' was originally derived as an acronym for Global Astrometric Interferometer for Astrophysics. This reflected the optical technique of interferometry that was originally planned for use on the spacecraft. However, the working method has now changed, and although the acronym is no longer applicable, the name Gaia remains to provide continuity with the Hipparcos project.

The total cost of the mission is around •740 million (~ \$1 billion), including the manufacture, launch and ground operations.

Objectives

The Gaia space mission has the following objectives :

To determine the intrinsic luminosity of a star requires knowledge of its distance. One of the few ways to achieve this without physical assumptions is through the star's parallax. Ground-based observations would not measure such parallaxes with sufficient precision due to the effects of the atmosphere and instrumental biases.

Observations of the faintest objects will pro-

vide a more complete view of the stellar luminosity function. All objects up to a certain magnitude must be measured in order to have unbiased samples.

A large number of objects are needed to examine the more rapid stages of stellar evolution. Observing a large number of objects in the galaxy is also important in order to understand the dynamics of our galaxy. Note that a billion stars still represent less than 1% of the content of the Milky Way galaxy.

Measuring the astrometric and kinematic properties of a star is necessary in order to understand the various stellar populations, especially the most distant.

In order to achieve these objectives, Gaia is expected to:

Determine the position, distance, and annual proper motion of 1 billion stars with an accuracy of about 20 μas (microarcsecond) at 15 mag, and 200 μas at 20 mag.

Determine the positions of stars at a magnitude of V = 10 down to a precision of 7 millionths of an arcsecond (this is equivalent to measuring the diameter of a hair from 1000 km away); between 12 and 25 μas down to V = 15, and between 100 and 300 μas to V = 20, depending on the colour of the star.

About 20 million stars will be measured with a distance precision of 1% and about 200 million will be measured to better than 10%. Distances accurate to 10% will be achieved as far away as the Galactic Centre, 30,000 light-years away. Measure the tangential speed of 40 million stars to a precision of better than 0.5 km/s.

Derive the atmospheric parameters (effective temperature, line-of-sight interstellar extinction, surface gravity, metallicity) for all stars observed, plus some more detailed chemical abundances for targets brighter than V = 15.

Measure the orbits and inclinations of a thousand extrasolar planets accurately, determining their true mass using astrometric planet detection methods.

Detect the bending of starlight by the Sun's gravitational field, as predicted by Albert Einstein's General Theory of Relativity, and therefore directly observe the structure of space-time.

Potential to discover A pohele asteroids with orbits that lie between Earth and the Sun, a region that is difficult for Earth-based telescopes to monitor since this region is only visible in the sky during or near the daytime.

Detect up to 500,000 quasars.

Scientific instruments

The Gaia payload consists of three main instruments :

The astrometry instrument (Astro) precisely determines the positions of stars of magnitude 5.7 to 20 by measuring their angular position. By combining the measurements of any given star over the five-year mission, it will be possible to determine its parallax, and therefore its distance, and its proper motion —the velocity of the star as it moves on the plane of the sky.

The photometric instrument (BP/RP) allows the acquisition of luminosity measurements of stars over the 320–1000 nm spectral band, over the same magnitude 5.7–20. The blue and red photometers (BP/RP) are used to determine stellar properties such as temperature, mass, age and elemental composition. Multi-colour photometry is provided by two low-reso-

lution fused-silica prisms dispersing all the light entering the field of view in the along-scan direction prior to detection. The Blue Photometer (BP) operates in the wavelength range 330–680 nm; the Red Photometer (RP) covers the wavelength range 640–1050 nm.

The Radial-Velocity Spectrometer (RVS) is used to determine the velocity of celestial objects along the line of sight by acquiring high-resolution spectra in the spectral band 847–874 nm (field lines of calcium ion) for objects up to magnitude 17. Radial velocities are measured with a precision between 1 km/s (V=11.5) and 30 km/s (V=17.5). The measurements of radial velocities are important to correct for perspective acceleration which is induced by the motion along the line of sight." The RVS reveals the velocity of the star along the line of sight of Gaia by measuring the Doppler shift of absorption lines in a high-resolution spectrum.

In order to maintain the fine pointing to focus on stars many light years away, there are almost no moving parts. The spacecraft subsystems are mounted on a rigid silicon carbide frame, which provides a stable structure that will not expand or contract due to heat. Attitude control is provided by small cold gas thrusters that can output 1.5 micrograms of nitrogen per second.

The telemetric link with the satellite is about 3 Mbit/s on average, while the total content of the focal plane represents several Gbit/s. Therefore only a few dozen pixels around each object can be downlinked.

Measurement principles

Despite its name, Gaia does not actually use interferometry to determine the positions of stars. At the time of the original design, interferometry seemed the best way to achieve the target resolution, but the design later evolved into an imaging telescope. Similar to its predecessor Hipparcos, Gaia consists of two telescopes providing two observing directions with a fixed, wide angle (106.5°) between them. The spacecraft rotates continuously around an axis perpendicular to the two telescopes' lines of sight. The spin axis in turn has a slight precession across the sky, while maintaining the same angle to the Sun. By precisely measuring the relative positions of objects from both observing directions, a rigid system of reference is obtained.

The two key telescope properties are:

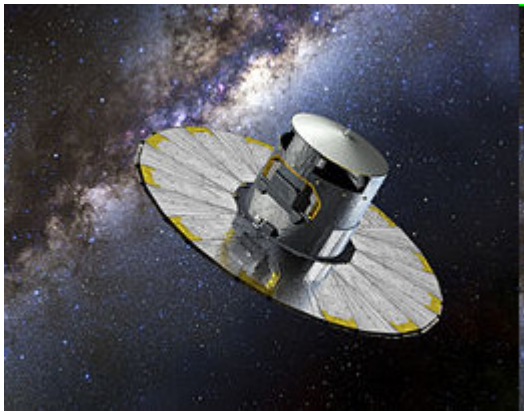
1.45 × 0.5 m primary mirror for each telescope

1.0 × 0.5 m focal plane array on which light from both telescopes is projected. This in turn consists of 106 CCDs of 4500 × 1966 pixels each.

Each celestial object will be observed on average about 70 times during the mission, which is expected to last five years. These measurements will help determine the astrometric parameters of stars: two corresponding to the angular position of a given star on the sky, two for the derivatives of the star's position over time (motion) and lastly, the star's parallax from which distance can be calculated. The radial velocity of the brighter stars is measured by an integrated spectrometer observing the Doppler effect.

Data processing

The overall data volume that will be retrieved from the spacecraft during the five-year mission assuming a nominal compressed data rate of 1 Mbit/s is approximately 60 TB, amounting to about 200 TB of usable uncompressed data



Mission type	Space observatory
Operator	ESA
COSPAR ID	2013-074A
Website	sci.esa.int/gaia/
Mission duration	5 years (planned)
Spacecraft properties	
Manufacturer	EADS Astrium
	e2v Technologies
Launch mass	2,029 kg (4,470 lb)
Dry mass	1,392 kg (3,070 lb)
Dimensions	4.6 m × 2.3 m (15 ft × 7.5 ft)
Power	1910 watts
Start of mission	
Launch date	19 December 2013, 09:12:14 UTC
Rocket	Soyuz ST-B/Fregat-MT
Launch site	Kourou ELS
Contractor	Arianespace
Orbital parameters	
Reference system	Sun–Earth L ₂
Regime	Lissajous orbit
Periapsis	90,000 km (56,000 mi) (planned)
Apoapsis	340,000 km (210,000 mi) (planned)
Period	180 days
Epoch	planned
Transponders	
Band	S Band (TT&C support) X Band (data acquisition)
Bandwidth	few kbit/s down & up (S Band) 3–8Mbit/s download (X Band)
Instruments	
ASTRO: Astrometric instrument	
BP/RP: Photometric instrument	
RVS: Radial Velocity Spectrometer	

on the ground, stored in the InterSystems Caché database. The responsibility of the data processing, partly funded by ESA, has been entrusted to a European consortium (the Data Processing and Analysis Consortium, or DPAC) which has been selected after its proposal to the ESA Announcement of Opportunity released in November 2006. DPAC's funding is provided by the participating countries and has been secured until the production of the Gaia final Catalogue scheduled for 2020.

Gaia will send back data for about eight hours every day at about 5 Mbit/s. ESA's two most sensitive ground stations, the 35 m diameter radio dishes in Cebreros, Spain, and New Norcia, Australia, will receive the data.

Launch and orbit

In October 2013 ESA had to postpone Gaia's original launch date, due to a precautionary replacement of two of Gaia's transponders. These are used to generate timing signals for the downlink of science data. A problem with an identical transponder, on a satellite already in orbit, necessitated their replacement and reverification once incorporated into Gaia. The scheduled launch window was from 17 December 2013 to 5 January 2014, and Gaia slated for launch on 19 December.

Gaia was successfully launched on 19 December 2013 at 09:12 UTC. It will reach its designated orbit around the SEL2 point about three weeks after launch.

EDITORIAL

DEVELOP INDIA

English Weekly Newspaper
Year 5, Vol. 1, Issue 282, 29 December, 2013 - 5 January 2014

Euromaidan

The Euromaidan is a wave of demonstrations and civil unrest in Ukraine, which began on the night of 21 November 2013 with very large public protests demanding closer European integration. The scope of the protests has since evolved, with many calls for the resignation of President Yanukovych and his government. Protesters also have stated they joined because of the dispersal of protesters on 30 November and "a will to change life in Ukraine".

The demonstrations began on the night of 21 November 2013, when spontaneous protests erupted in the capital of Kiev after the Ukrainian government suspended preparations for signing an Association Agreement and Deep and Comprehensive Free Trade Agreement with the European Union. After a few days of demonstrations an increasing number of university students joined the protests.

The protests are ongoing despite a heavy police presence, regular sub-zero temperatures, and snow. Escalating violence in the early morning of 30 November from government forces has caused the level of protests to rise, with 400,000–800,000 protesters demonstrating in Kiev on the weekends of 1 December and 8 December. On Sunday 22 December this number had dropped to 100,000. In a poll taken on 7 and 8 December, 73% of protesters had committed to continue protesting in Kiev as long as needed until their demands are fulfilled.

On 30 March 2012 the European Union (EU) and Ukraine initialed an Association Agreement; however, the EU leaders later stated that the agreement would not be ratified unless Ukraine addressed concerns over a "stark deterioration of democracy and the rule of law", including the imprisonment of Yulia Tymoshenko and Yuriy Lutsenko in 2011 and 2012. In the months leading up to the protests Ukrainian President Viktor Yanukovych urged the parliament to adopt laws so that Ukraine would meet the EU's criteria. On 25 September 2013 Chairman of the Verkhovna Rada (Ukraine's parliament) Volodymyr Rybak stated that he was sure that his parliament would pass all the laws needed to fit the EU criteria for the Association Agreement since, except for the Communist Party of Ukraine, "The Verkhovna Rada has united around these bills".

Mid-August 2013 Russia changed its customs regulations on imports from Ukraine. Ukrainian Industrial Policy Minister Mykhailo Korolenko stated on 18 December 2013 that because of this Ukraine's exported had dropped by \$1.4 billion (or a 10% year-on-year decrease through the first 10 months of the year). The State Statistics Service of Ukraine reported in November 2013 that in comparison with the same months of 2012 industrial production in Ukraine in October 2013 had fallen by 4.9 percent, in September 2013 by 5.6 percent and in August 2013 by 5.4 percent (and that the industrial production in Ukraine in 2012 total had fell by 1.8 percent).

On 21 November 2013 a Ukrainian government decree suspended preparations for signing of the association agreement. The reason given was that the previous months Ukraine had experienced "a drop in industrial production and our relations with CIS countries".

The government also assured "Ukraine will resume preparing the agreement when the drop in industrial production and our relations with CIS countries are compensated by the European market". According to Ukrainian Prime Minister Mykola Azarov "the extremely harsh conditions" of an IMF loan (presented by the IMF on 20 November 2013), which included big budget cuts and a 40% increase in gas bills, had been the last argument in favor of the Ukrainian government's decision to suspend preparations for signing the Association Agreement. On 7 December 2013 the IMF clarified that it was not insisting on a single-stage increase in natural gas tariffs in Ukraine by 40%, but recommended that they be gradually raised to an economically justified level while compensating the poorest segments of the population for the losses from such an increase by strengthening targeted social assistance. The same day IMF Resident Representative in Ukraine Jerome Vacher stated that this particular IMF loan is worth US\$4 billion and that it would be linked with "policy, which would remove disproportions and stimulated growth".

President Yanukovych did attend the 28–29 November 2013 EU summit in Vilnius (where originally it was planned that the Association Agreement would be signed on 29 November 2013) but the Association Agreement was not signed. Both Yanukovych and high level EU officials did signal that they wanted to sign the Association Agreement at a later date. Ukrainians have shown preference to extending economic ties with the EU. According to an August 2013 study of a Donetsk company Research & Branding Group 49% of Ukrainians supported signing the Association Agreement, while 31% opposed it and the rest had not decided yet. The strongest support (74%) was in the Western oblasts of Ukraine, following by the Central oblasts (57% supporters), while the support for the Agreement was weaker in the Southern oblasts (38% support vs 45% oppose) and Eastern oblasts (29% support vs 43% oppose). In a GfK poll conducted October 2–15, 2013, 45% of respondents believed Ukraine should sign an Association Agreement with the EU, whereas only 14% favored joining the Customs Union of Belarus, Kazakhstan, and Russia, and 15% preferred non-alignment. Another poll conducted in November by IFAK Ukraine for DW-Trend showed 58% of Ukrainians supporting the country's entry into the European Union. On the other hand a November 2013 poll by Kyiv International Institute of Sociology showed 39% supporting the country's entry into the European Union and 37% supporting Ukraine's accession to the Customs Union of Belarus, Kazakhstan and Russia.

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Nuclear program of Iran

Begning of Nuclear program of Iran 1956–1979

1957: The United States and Iran sign a civil nuclear co-operation agreement as part of the U.S. Atoms for Peace program.

August 9, 1963: Iran signs the Partial nuclear test ban treaty (PTBT) and ratifies it on December 23, 1963.

1967: The Tehran Nuclear Research Centre is built and run by the Atomic Energy Organization of Iran (AEOI).

September 1967: The United States supplies 5.545 kg of enriched uranium, of which 5.165 kg contain fissile isotopes for fuel in a research reactor. The United States also supplies 112 g of plutonium, of which 104 g are fissile isotopes, for use as start-up sources for research reactor.

July 1968: Iran signs the Nuclear Non-Proliferation Treaty and ratifies it. It goes into effect on March 5, 1970.

1970s: Under the rule of Mohammad Reza Shah Pahlavi, plans are made to construct up to 20 nuclear power stations across the country with U.S. support and backing. Numerous contracts are signed with various Western firms, and the German firm Kraftwerk Union (a subsidiary of Siemens AG) begins construction on the Bushehr power plant in 1974.

1974: the Atomic Energy Act of Iran was promulgated. The Act covers the activities for which the Atomic Energy Organization of Iran was established at that period. These activities included using atomic energy and radiation in industry, agriculture and service industries, setting up atomic power stations and desalination factories, producing source materials needed in atomic industries. This creates the scientific and technical infrastructure required for carrying out the said projects, as well as co-ordinating and supervising all matters pertaining to atomic energy in the country.

1974: The Shah lent \$1 billion to the French Atomic Energy Commission to help build the Eurodif uranium processing company in Europe. In exchange, Iran received rights to 10% of the enriched uranium product, a right Iran never exercised. After a bitter legal dispute, the loan was repaid in 1991. Following the passage of United Nations Security Council Resolution 1737 in 2006, UN financial sanctions required France to freeze dividend payments to the Atomic Energy Organization of Iran.

1975: Massachusetts Institute of Technology signs a contract with the Atomic Energy Organization of Iran to provide training for Iranian nuclear engineers.

1975: Iran buys a 15% interest in the Rössing uranium mine of Namibia. However, due to international pressure, it is never allowed to collect any uranium from this outside country.

1979–1996

1979: Iran's Islamic revolution puts a freeze on the existing nuclear program and the Bushehr contract with Siemens AG is terminated as the German firm leaves.

1982: Iranian officials announced that they planned to build a reactor powered by their own uranium at the Isfahan Nuclear Technology Centre.

1983: International Atomic Energy Agency inspectors inspect Iranian nuclear facilities, and report on a proposed co-operation agreement to help Iran manufacture enriched uranium fuel as part of Iran's "ambitious program in the field of nuclear power reactor technology and fuel cycle technology." The assistance program is later terminated under U.S. pressure.

1984: Iranian radio announced that negotiations with Niger on the purchase of uranium were nearing conclusion.

1985: Iranian radio programs openly discuss the significance of the discovery of uranium deposits in Iran with the director of Iran's Atomic Energy Organisation. also in this year Iran, Syria and Libya say that they should all develop nuclear weapons to counter the Israeli nuclear threat.

1989: the Radiation Protection Act of Iran was ratified in public session of April 9, 1989 by the Parliament and was approved by the Council of Law-Guardians on April 19, 1989.

1990: Iran begins negotiations with the Soviet Union regarding the re-construction of the Bushehr power plant.

1992: Iran signs an agreement with China for the building of two 950-megawatt reactors in Darkhovin (Western Iran). To date, construction has not yet begun.

1993: China provides Iran with an HT-6B Tokamak fusion reactor that is installed at the Plasma Physics Research Centre of Azad University.

January 1995: Iran signs an \$800 million contract with the Russian Ministry of Atomic Energy (MinAtom) to complete a Light water reactor in Bushehr under IAEA safeguards.

1996: China and Iran inform the IAEA of plans to construct a nuclear enrichment facility in Iran, but China withdraws from the contract under U.S. pressure. Iran advises the IAEA that it plans to pursue the construction anyway.

2002–2004

August 2002: A spokesman for the MEK terrorist group holds a press conference to "expose" two nuclear facilities in Natanz and Arak that they claim to have discovered. However, the sites were already known to U.S. intelligence. Furthermore, under the terms of Iran's then-existing safeguards agreement with the IAEA, Iran was under no obligation to disclose the facilities while they were still under construction and not yet within the 180-day time limit specified by the safeguards agreement.

December 2002: The United States accuses Iran of attempting to make nuclear weapons.

Spring 2003: Iran makes a comprehensive proposal of negotiations with the United States that offers "full transparency for security that there are no Iranian endeavors to develop or possess WMD", joint decisive action against terrorists, coordination on a stable Iraq, coordination on nuclear matters, stop of any material support to Palestinian opposition groups (Hamas, Jihad etc.) resisting Israeli occupation, and a normalization of relationships. The offer is spurned by V.P. Cheney and the Bush administration, which instead criticizes the Swiss ambassador who forwarded the offer.

June 16, 2003: Mohamed ElBaradei, Director General of the International Atomic Energy Agency, declares that "Iran failed to report certain nuclear materials and activities" and requests "co-operative actions" from the country. The International Atomic Energy Agency does not at this time decide to declare Iran in non-compliance with its safeguards agreement under the Non-Proliferation Treaty.

October 21, 2003: As a confidence-building measure, Iran and the EU-3 agree to negotiations under the terms of the Paris Agreement, pursuant to which Iran agrees to temporarily suspend enrichment and permit more stringent set of nuclear inspections in accordance with the Additional Protocol, and the EU-3 explicitly recognizes Iran's right to civilian nuclear programs in accordance with the Non-Proliferation Treaty. The EU-3 submits a demand in August 2005 that

Iran abandon enrichment nonetheless.

October 31, 2003: After negotiations with Iran and the US on language in the IAEA document, the IAEA declares that Iran has submitted a "comprehensive" declaration of its nuclear program.

November 11, 2003: The IAEA reports that Iran had many breaches and failures to comply with its safeguards agreement, including a "policy of concealment" from the IAEA, but also states that there is "no evidence" that Iran is attempting to build an atomic bomb.

November 13, 2003: The Bush administration claims that the IAEA conclusion of "no evidence" is "impossible to believe."

December 18, 2003: As agreed in the Paris Agreement, Iran voluntarily signs and implements the Additional Protocol to the Nuclear Non-Proliferation Treaty Though the Protocol was not binding on Iran until ratified, Iran voluntarily agrees to permit expanded and more intensive IAEA inspections pursuant to the Protocol, which fail to turn up a nuclear weapons program in Iran. Iran ends the voluntarily implementation of Additional Protocol after two years of inspections, as a protest to continued EU-3 demands that Iran abandon all enrichment.

June 2004: Kamal Kharrazi, Iran's foreign minister, responding to demands that Iran halt its nuclear program, says: "We won't accept any new obligations. Iran has a high technical capability and has to be recognised by the international community as a member of the nuclear club. This is an irreversible path."

June 14, 2004: Mohamed ElBaradei, Director General of the International Atomic Energy Agency, accuses Iran of "less than satisfactory" co-operation during the IAEA investigation of its nuclear program. ElBaradei demands "accelerated and proactive cooperation" from Iran which exceed the terms of Iran's legal obligations.

July 27, 2004: Iran removes seals placed upon uranium centrifuges by the International Atomic Energy Agency and resumes construction of the centrifuges at Natanz.

On June 29, 2004, IAEA Director General Mohammad ElBaradei announced that the Bushehr reactor was "not of international concern" since it was a bilateral Russian-Iranian project intended to produce nuclear energy.

July 31, 2004: Iran states that it has resumed building nuclear centrifuges to enrich uranium, reversing a voluntary October 2003 pledge to Britain, France, and Germany to suspend all uranium enrichment-related activities. The United States contends that the purpose is to produce weapons-grade uranium.

August 10, 2004: Several long-standing charges and questions regarding weapons-grade uranium samples found in Iran are clarified by the IAEA. Some samples match Pakistani and Russian sources which had contaminated imported Iranian equipment from those countries. The sources of the remaining samples remain unaccounted for.

August 24, 2004: Iranian Foreign Minister Kamal Kharrazi declares in Wellington, New Zealand, that Iran will retaliate with force against Israel or any nation that attempts a pre-emptive strike on its nuclear program. Earlier in the week, Israel's Chief of Staff, General Moshe Ya'alon, told an Israeli newspaper that "Iran is striving for nuclear capability and I suggest that in this matter [Israel] not rely on others."

September 6, 2004: The latest IAEA report finds that "unresolved issues surrounding Iran's atomic program are being clarified or resolved outright".

September 18, 2004: The IAEA unanimously adopts a resolution calling on Iran to suspend all activities related to uranium enrichment.

September 21, 2004: Iran announces that it will continue its nuclear program converting 37 tonnes of yellowcake uranium for processing in centrifuges.

October 18, 2004: Iran states that it is willing to negotiate with the U.K., Germany, and France regarding a suspension of its uranium enrichment activities, but that it will never renounce its right to enrich uranium.

October 24, 2004: The European Union makes a proposal to provide civilian nuclear technology to Iran in exchange for Iran terminating its uranium enrichment program permanently. Iran rejects this outright, saying it will not renounce its right to enrichment technologies. A decision to refer the matter from the International Atomic Energy Agency to the United Nations Security Council is expected on November 25, 2004.

November 15, 2004: Talks between Iran and three European Union members, the United Kingdom, France, and Germany, result in a compromise. Iran agrees to temporarily suspend its active uranium enrichment program for the duration of a second round of talks, during which attempts will be made at arriving at a permanent, mutually-beneficial solution.

November 15, 2004: A confidential UN report is leaked. The report states that all nuclear materials within Iran have been accounted for and there is no evidence of any military nuclear program. Nevertheless, it still cannot discount the possibility of such a program because it does not have perfect knowledge.

November 22, 2004: Iran declares that it will voluntarily suspend its uranium enrichment program to enter negotiations with the EU. Iran will review its decision in three months. The EU seeks to have the suspension made permanent and is willing to provide economic and political incentives.

November 24, 2004: Iran seeks to obtain permission from the European Union, in accordance with its recent agreement with the EU, to allow it to continue working with 24 centrifuges for research purposes.

November 28, 2004: Iran withdraws its demand that some of its technology be exempted from a freeze on nuclear enrichment activities.

2005

Jan 17, 2005: Iran offers a proposal to the EU. It includes: An Iranian commitment not to pursue weapons of mass destruction; cooperation on combating terrorism, and on regional security, including for Iraq and Afghanistan; and cooperation on strategic trade controls. The proposal was not accepted.

Mar 23, 2005: Iran offers a proposal to the EU including: Iran's adoption of the IAEA Additional Protocol and continuous on-site inspections at key facilities; as well as limiting the expansion of Iran's enrichment program, and a policy declaration of no reprocessing. The proposal was not accepted.

June 2005: U.S. Secretary of State Condoleezza Rice said IAEA head Mohamed ElBaradei should either "toughen his stance on Iran" or fail to be chosen for a third term as the agency's head. Following a one on one meeting between Rice and ElBaradei on June 9, the United States withdrew its opposition and ElBaradei was re-elected to his position on June 13, 2005.

August 5, 2005: The EU-3 submit a proposal to Iran pursuant to the Paris Agreement which

requires Iran to permanently cease enrichment. The proposal is rejected by Iran as a violation of the Paris Agreement and Iran's Non-Proliferation Treaty rights.

Between August 8 and August 10, 2005: Iran resumed the conversion of uranium at the Isfahan facility, under IAEA safeguards, but did not engage in enrichment of uranium.

August 9, 2005: The Iranian Head of State, Ayatollah Ali Khamenei, issued a fatwa forbidding the production, stockpiling and use of nuclear weapons. The full text of the fatwa was released in an official statement at the meeting of the International Atomic Energy Agency in Vienna.

August 11, 2005: The 35-member governing board of the IAEA adopted a resolution calling upon Iran to suspend uranium conversion, and instructing ElBaradei to submit a report on Iran's nuclear program by September 3, 2005.

August 15, 2005: Iran's new president, Mahmoud Ahmadinejad, installed his new government. Iranian presidents do not have exclusive control over Iran's nuclear program, which falls mainly under the purview of Iran's Supreme Leader. Ali Larijani replaced Hassan Rowhani as secretary of the Supreme National Security Council, Iran's top policy-making body, with nuclear policy in his purview.

September 15, 2005: Ahmadinejad stated at a United Nations high-level summit that Iran has the right to develop a civil nuclear-power program within the terms of the 1970 treaty on the non-proliferation of nuclear weapons. He offered a compromise solution in which foreign companies would be permitted to invest and participate in Iran's nuclear program, which he said would ensure that it could not be secretly diverted to make nuclear weapons. The majority of the U.S. delegation left during his speech, but the U.S./UN mission denied there was a walkout.

September 24, 2005: The IAEA Board of Governors finds that the failures and breaches reported in November 2003 constitute non-compliance with Iran's safeguards agreement.

October 10, 2005: Iranian Oil Ministry Deputy for International Affairs Hadi Nejad-Hosseinian said that Iran could run out of oil reserves in nine decades.

November 5, 2005: The Iranian government approved a plan that allows foreign investors to participate in the work at the Natanz uranium enrichment plant. The cabinet also authorised the AEOI to take necessary measures to attract foreign and domestic investment in the uranium enrichment process.

November 19, 2005: The IAEA released a report saying that Iran blocked nuclear inspectors from the United Nations from conducting a second visit to a site known as Parchin military complex, where Iran was not legally required to allow inspections at all. The first inspections had failed to turn up any evidence of a nuclear program. IAEA Director-General Mohamed ElBaradei said in the report, "Iran's full transparency is indispensable and overdue." Separately, Iran confirmed that it had resumed the conversion of new quantities of uranium pursuant to its rights under the NPT, despite an IAEA resolution to stop such work.

2006

January 2006: Iran provides the European negotiating side with a six-point proposal, which includes an offer to again suspend uranium enrichment for a period of two years, pending the outcome of continued negotiations. The offer is dismissed by the Europeans, and not reported in the Western press. This offer of compromise follows several other offers from Iran, all of which were summarily dismissed by the US.

January 31, 2006: The IAEA reports that "Iran has continued to facilitate access under its Safeguards Agreement as requested by the Agency ... including by providing in a timely manner the requisite declarations and access to locations" and lists outstanding issues.

January 2006: The New York Times reporter James Risen published State of War, in which he alleged a CIA operation code-named Operation Merlin backfired and may have helped Iran in its nuclear program, in an attempt to delay it feeding them false information.

February 4, 2006: The IAEA votes 27-3 to report Iran to the United Nations Security Council. After the vote, Iran announced its intention to end voluntary co-operation with the IAEA beyond basic Nuclear Non-Proliferation Treaty requirements, and to resume enrichment of uranium.

March 2006: The U.S. National Security Strategy decried Iran, stating that "Iran has violated its Non-Proliferation Treaty safeguards obligations and refuses to provide objective guarantees that its nuclear program is solely for peaceful purposes." The term "objective guarantees" is understood to mean permanent abandonment of enrichment.

March 15, 2006: Mahmoud Ahmadinejad reaffirms Iran's commitment to developing a domestic nuclear power industry.

March 27, 2006: In a Foreign Policy article entitled "Fool Me Twice", Joseph Cirincione, director for non-proliferation at the Carnegie Endowment for International Peace, claimed that "some senior officials have already made up their minds: They want to hit Iran." and that there "may be a co-ordinated campaign to prepare for a military strike on Iran." Joseph Cirincione also warns "that a military strike would be disastrous for the United States. It would rally the Iranian public around an otherwise unpopular regime, inflame anti-American anger around the Muslim world, and jeopardise the already fragile U.S. position in Iraq. And it would accelerate, not delay, the Iranian nuclear program. Hard-liners in Tehran would be proven right in their claim that the only thing that can deter the United States is a nuclear bomb. Iranian leaders could respond with a crash nuclear program that could produce a bomb in a few years."

April 11, 2006: Ahmadinejad announced that Iran had enriched uranium to reactor-grade using 164 centrifuges. He said, "I am officially announcing that Iran has joined the group of those countries which have nuclear technology. This is the result of the Iranian nation's resistance. Based on international regulations, we will continue our path until we achieve production of industrial-scale enrichment". He reiterated that the enrichment was performed for purely civil power purposes and not for weapons purposes.

April 28, 2006: The International Atomic Energy Agency hands a report titled Implementation of the NPT Safeguards Agreement in the Islamic Republic of Iran to the UN Security Council. The IAEA says that Iran has stepped up its uranium enrichment programs during the 30 day period covered by the report.

June 1, 2006: The UN Security Council agrees to a set of proposals designed to reach a compromise with Iran.

July 31, 2006:United Nations Security Council Resolution 1696 gives until August 31, 2006 for

Iran to suspend all uranium enrichment and related activities or face the prospect of sanctions. The draft passed by a vote of 14-1 (Qatar, which represents Arab states on the council, opposing). The same day, Iran's U.N. Ambassador Javad Zarif qualified the resolution as "arbitrary" and illegal because the NTP protocol explicitly guarantees under international law Iran's right to pursue nuclear activities for peaceful purposes. In response to today's vote at the UN, Iranian President Mahmoud Ahmadinejad said that his country will revise his position vis-à-vis the economic/incentive package offered previously by the G-6 (5 permanent Security council members plus Germany.)

September 16, 2006: (Havana, Cuba) All of the 118 Non-Aligned Movement member countries declare their support for Iran's nuclear program for civilian purposes in their final written statement. That is a clear majority of the 192 countries comprising the entire United Nations.

December 23, 2006: United Nations Security Council Resolution 1737 was unanimously passed by the United Nations Security Council. The resolution, sponsored by France, Germany and the United Kingdom, imposed sanctions against Iran for failing to stop its uranium enrichment program following resolution 1696. It banned the supply of nuclear-related technology and materials and froze the assets of key individuals and companies related to the enrichment program. The resolution came after the rejection of UN economic incentives for Iran to halt their nuclear enrichment program. The sanctions will be lifted if Iran suspends the "suspect activities" within 60 days to the satisfaction of the International Atomic Energy Agency.

2007

January 15, 2007: Ardeshir Hosseinpour, an Iranian junior scientist involved in The Uranium Conversion Facility at Isfahan, dies, reportedly due to "gassing". Several other scientists may also be killed or injured, and treated in nearby hospitals.

January 21, 2007: The death of Ardeshir Hosseinpour is finally reported by the Al-Quds daily and the Iranian Student's News Agency (in Arabic & Persian).

February 2, 2007: The U.S. private intelligence company Stratfor releases a report saying that Ardeshir Hosseinpour was killed by the Mossad through radioactive poisoning.

February 4, 2007: Reva Bhalla of Stratfor confirms the details of Stratfor's report to The Sunday Times. Despite the previous reports, the "semi-official" Fars News Agency reports that an unnamed informed source in Tehran told them that Ardeshir Hosseinpour was not involved in the nuclear facility at Isfahan, and that he "suffocated by fumes from a faulty gas fire in sleep."

March 6, 2007: Gholam Reza Aghazadeh, the head of Atomic Energy Organization of Iran declared that Iran has started construction of a domestically built nuclear power plant with capacity of 360 MW in Darkhovin, in southwestern Iran.

March 24, 2007: United Nations Security Council Resolution 1747 was adopted unanimously by the United Nations Security Council on 24 March 2007. In the resolution, the Council resolved to tighten the sanctions imposed on Iran in connection with that nation's nuclear program. It also resolved to impose a ban on arms sales and to step up the freeze on assets already in place.

April 9, 2007: President Ahmadinejad has announced Iran can now produce nuclear fuel on an industrial scale. Some officials said 3,000 uranium gas enrichment centrifuges were running at the Natanz plant in central Iran.

June 7, 2007: *Head of the International Atomic Energy Agency, Mohammad ElBaradei was quoted by the BBC as warning against the views of "new crazies who say 'let's go and bomb Iran'".

June 30, 2007: U.S. Congressional Representatives Mark S. Kirk and Robert E. Andrews proposed a bill to sanction against any company or individual that provides Iran with refined petroleum products. The plan is to pressure Iran over its nuclear program from December 31, 2007.

December 3, 2007: The U.S. Intelligence Community released a National Intelligence Estimate concluding that Iran "halted its nuclear weapons program" in 2003, but "is keeping open the option to develop nuclear weapons."

December 11, 2007: British spy chiefs have grave doubts that Iran has mothballed its nuclear weapons program, as a US intelligence report claimed last week, and believe the CIA has been hoodwinked by Tehran.

December 16, 2007: Iran's president said on Sunday the publication of a U.S. intelligence report saying Iran had halted a nuclear weapons program in 2003 amounted to a "declaration of surrender" by Washington in its row with Tehran.

2008

March 4, 2008: The UN Security Council adopts Resolution 1803 - the third sanction resolution on Iran with a 14-0 vote (Indonesia abstained). The resolution extends financial sanctions to additional banks, extends travel bans to additional persons and bars exports to Iran of nuclear- and missile-related dual-use items.

March 24, 2008: The last shipment of fuel and equipment arrives at the Bushehr Nuclear Power Plant.

May 16, 2008: Iran offers proposed package to the UN, UN Security Council, Group of G+1 and submitted to Russia and China.

2009

February 17: In Paris, International Atomic Energy Agency Director-General Mohamed ElBaradei said that Iran is still not helping United Nations nuclear inspectors find out whether it worked on developing an atom bomb in the past but Tehran has slowed its expansion of a key nuclear facility. "They haven't really been adding centrifuges, which is a good thing," ElBaradei said at a think-tank in Paris, adding: "Our assessment is that it's a political decision."

June 5: IAEA releases report on Iran's compliance with the NPT. The IAEA claims the following: Access not granted for a recent inspection on May 19; access not granted since August 2008 to heavy water reactor at Arak; and, IAEA not given design information for reactor at Darkhovin. The IAEA further reports that Iran has not implemented the Additional Protocol (a requirement of UN Security Council Resolution 1737) and has not cooperated in providing information which remains unclear or missing.

June 19: El Baradei stated he had a "gut feeling that Iran definitely would like to have the technology" enabling it to possess nuclear weapons. He told the BBC that Iran wants to "send a message" to its neighbors and the rest of the world: "Don't mess" with Iran and "we can have nuclear weapons if we want to." Asked about voices in Israel who back a military strike against Iran to stop it from getting a nuclear weapon, El Baradei reiterated his opposition, saying "military action" would turn the region "into a ball of fire."

July 8–10: On the 35th G8 summit, US president Obama said Iran will have to September (at the G20 meeting) to show some improvements on the negotiations about Iran's nuclear program, or else "face consequences". French president Nicolas Sarkozy said G8 are united on the issue with Iran, stating that patience with Iran was running thin: "For the past 6 years we have extended our hand saying stop your nuclear armament program... Do they want discussions or don't they want them? If they don't, there will be sanctions" he told reporters. Sarkozy also stated that Israel attacking Iran, would be an absolute catastrophe. "Israel should know that it is not alone and should follow what is going on calmly," he said, adding that he had not received any assurances that Israel would hold off on any action ahead of the September deadline.

July 25: Mohammad Ali Jafari, Iran's Revolutionary Guards commander-in-chief, said that if Israel attacked Iran, Iran would strike Israel's nuclear facilities with their missiles: "Our missile capability puts all of the Zionist regime (Israel) within Iran's reach to attack," Jafari said.

August 7: US Air Force General Charles Wald said that a devastating US military strike against Iran's nuclear and military facilities "is a technically feasible and credible option".

2010

May 17: Iran, Turkey and Brazil announced a deal on procedures for a nuclear fuel swap aimed at easing concerns over Tehran's nuclear program.

August 21: Iran acquires nuclear fuel rods from Russia

Syrian Civil War

(from May 2013)

May 2013

1 May
Rosaviation has ordered that Russian civilian flights cease flying over Syrian airspace.

3 May
Israel bombed a suspected weapons site in Syria.

4 May
Rebels continued their siege on Meng airbase. It was claimed that rebels had killed the base commander in clashes, and also seized the second military detachment of the base. Rebels claimed that a group of pilots defected and assassinated the base's commanding officer. The defected pilots told rebels that around 200 soldiers remained in the base, garrisoned in the headquarters building supported by a handful of tanks. Many soldiers resorted to sleeping under tanks, fearing a rebel assault.

5 May
Israeli planes reportedly hit targets just outside Damascus.

8 May
The Syrian government is reported to have blacked out all internet traffic into and out of Syria. Syria "has largely disappeared from the Internet". A similar event took place in November of last year.

Syrian Internet services were restored after a 19 hour blackout.

9 May
The Philippines is strongly considering withdrawing its 342 peacekeepers stationed in the Golan Heights after four of its peacekeepers were kidnapped by rebel forces.

10 May
3 Lebanese nationals were killed in fighting in Syria, a further 36 have been reported missing. How they were killed and whom they were fighting for remains unclear.

Rebel fighters managed to cut off the strategic road to Halab al-Jadida, that was the main supply line for the Syrian army between Hama and Aleppo. This happened through taking over the 2 checkpoints of al-Qebtein and Um Amud.

11 May
Rebels managed to cut a newly build desert road used as an Army supply route between central Syria and Aleppo's airport.

12 May
The Syrian army took control of Khirbet Ghazaleh, Daraa.

An explosion in the Syrian-Turkish border town of Reyhanli killed 46 and wounded 155 Turkish citizens.

13 May
The Syrian army captured the towns of Western Dumayna, Haidariyeh and Esh al-Warwar, near Qusayr.

A Turkish F-16 on an operational mission crashed near the border with Syria. Locals in the village of Yarpuz on the Turkish side of the border reported a loud explosion.

15 May
The United Nations updated their estimated death toll of the entire conflict to 80,000.

16 May
The Syrian army repelled a large rebel assault on an Aleppo prison. The attack was aimed at dislodging government forces and freeing an estimated 4,000 political prisoners are being held there, however the rebels were forced to retreat after airstrikes caused casualties among their ranks. Rebels blew open the prison's main-gate, and took control of a building.

Rebels besieged the 52 Brigade in Daraa. Rebels also claimed they recaptured the town of Qaysa, Rif Damascus, after launching a unified counter-offensive. Rebels also launched an attack on the Brigade 52 base in Daraa province.

By the end of the day 110 people were reported killed by the Syrian army with 60 were reported killed in Damascus and its suburbs.

17 May
The Russian navy has expanded their use of their naval base at the Syrian port of Tartus. Previously Russian ships only periodically visited the port, however in the last three months an average 10-15 ships have been reported as having been positioned near the port "at all times".

Rebels captured four villages in Eastern Hama, including the Alawite town of Tulaysiah. The villages were abandoned by its residents days before the rebels arrived.

The Human Rights Watch released a report about the government's mass-torture centers in Raqqa, which were previously accessible until Rebels captured the city.

18 May
Rebels took control of the villages of al-Tleysiya, al-Zughba, al-She'ta and Balil in East Hama. The father of Deputy Foreign Minister Faisal Mekdad has been kidnapped, based on past tactics, by rebel forces his home in Ghossom. In the Syrian-Lebanese border town of Qusayr rebels claimed to have killed at least 10 Hezbollah fighters in an ambush.

19 May
Heavy fighting is reported in Qusair, Syria, as the Syrian army launches a major offensive against rebel forces.

20 May
Deliberate gunfire from the Syrian side of the Golan Heights struck an Israeli patrol vehicle, Israeli soldiers returned fire, destroying the Syrian fire position.

Elite Hezbollah reinforcements were sent from Lebanon across the border to al-Qusayr. Activists reported that much of the town had been destroyed by this point.

22 May
US Senate panel backs arming Syrian rebels.

In fighting at Nayrab rebels have seized an army base and several army checkpoints. Killing 40 Syrian soldiers and pro-government militiamen in the process with the loss of 14 rebels.

23 May
A former government scientist claims that the Syrian government is using diluted chemical weapons, such as with alcohol, on rebels to slow their advance while reducing the number of casualties, leaving open the question as to whether it was military grade tear gas or nerve gas that was used in these attacks thus avoiding the U.S. "red line" on chemical weapons. Amongst the areas were the weapon were alleged to be used are certain suburbs of Damascus, Aleppo's Sheikh Maksoud district, Saraqeb and Homs. The scientist, who worked for Centre for Scientific Studies and Research, claims that the alleged gas attack on Khan al-Assa, Aleppo, on 19 March 2013, was likely tear gas and not nerve gas.

26 May
On 26 May 2013, two rockets hit a Hezbollah area of Beirut injuring five people whilst another two rockets caused property damage to buildings in the al-Hermel district of Beirut. Syrian rebels have been blamed for the attack as they had promised to attack Hezbollah targets in

Lebanon in retaliation for their helping the Syrian army particularly in the border town of Al-Qusayr. Syrian rebels have also shelled al-Hermel previously.

27 May
Fighting between Kurdish (YPG/PYD) and Liwa al-Tawhid forces in the Ras al-Ayn village near the border with Turkey left 11 dead and 20 wounded.

28 May
LCC reports 112 people were killed by the end of the day. 35 were killed in the Damascus suburbs.

29 May
LCC reported 161 people killed that day, including 12 women, 8 children, and 5 under torture. 53 were killed in the Latakia province.

30 May
A Syrian army general in March asked Rosoboronexport for a quote on a large number of military items "in the shortest possible time." These items included 20,000 Ak-47s, night vision equipment, 40mm grenade launchers and some 15,000,000 rounds of AK-47 ammunition. In relation to arms sales to the Assad government Deputy Foreign Minister Sergei Ryabkov stated that Russian arms, such as the S-300 surface to air missile, may actually "help restrain some ‘hotheads’ considering a scenario to give an international dimension to this conflict,"

31 May
The Syrian army allegedly attacked a convoy trying to remove injured people from the town [which?], killing at least 7. Local people report that 15,000 civilians remained trapped in the town with food and water running low. Civilians had to wait 3-4 days for drinking water.

LCC reports of 163 people killed by the Syrian army, including 66 in Aleppo, mostly in a prison massacre.

June 2013

12 June
At least 14 killed in double suicide attack in Damascus. Syrian helicopter fires on Lebanese town of Arsal.

14 June
US Government confirms that government forces used chemical weapons in Syria killing up to 150 people and announces increased "military support" to rebels as well as considering a limited no fly zone.

23 June
The Syrian Army captured the rebel stronghold town of Talkalakh. Following the assault, 39 local leaders of the Free Syrian Army surrendered and handed over their weapons. The Syrian opposition denied the town had fallen and claimed there was still fighting ongoing however reporters on the ground said there was no sign of it.

July 2013

11 July
Abu Bassir Al Ladkani, a top commander of the Free Syrian Army (FSA), was assassinated. The assassination was carried out by al Qaeda-linked militants.

August 2013

3-5 August
Islamist rebels kill at least 200 people during a three-day assault on Alawite villages in Latakia province. According to a local cleric, at least 100 of the victims were civilians, most of them women and children. A catholic nun said thet the number of civilian casualties could be as high as 400-500 and many of them were mutilated, beheaded or dismembered alive. Also, kidnapping of other 150 civilians has been reported.

6 August
Syrian rebels captured the Menagh Military Airport, situated on the road between Aleppo and the Turkish city of Gaziantep, after a one-year long siege. This capture marks an important symbolic victory for the opposition, following a string of defeats to President Assad's forces in central Syria and it consolidates the rebels' hold on a key supply route north of Aleppo.

14 August
The Syrian Observatory for Human Rights reported that Paolo Dall'Oglio, a Jesuit priest and missionary who had earlier been abducted by the ISIS, was killed in the rebel-held city of Ar-Raqqah.

21 August
Syrian activists reported that Assad forces struck Jobar, Zamalka, 'Ain Tirma, and Hazzah in the Eastern Ghouta region with chemical weapons. Activists at the Syrian Revolutionary Command Council said that at least 635 were killed in a nerve gas attack. Unverified videos uploaded showed the victims, many of who were convulsing, as well as several dozen bodies lined up. Other sources reported a figure of 213 in a poisonous gas attack. The SNC chief said that the overall death toll stood at an estimated 1300, as only a fraction of the bodies could be collected and many died within their own homes.

24 August
Rebel forces took full control of Ariha In Idlib Province.

26 August
The United Kingdom and the United States deployed ships near Syria amidst a United Nations investigation concerning allegations that Syrian president al-Assad used chemical weapons against civilians. The following ships were deployed: HMS Bulwark, HMS Illustrious, USS Barry, USS Gravelly, USS Mahan, and USS Ramage. The rebels in Syria also captured the village of Khanasir. It was the last key government supply route for the government forces in Aleppo.

29 August
British Parliament had decided not to take action in Syria. David Cameron had supported military actions in Syria, but the majority vote was 'no'. Cameron said he respects the vote. French Parliament is still deciding whether to take military action. The United States deployed their fifth warship, the USS Stout, to the Mediterranean.

30 August
The United States deployed their sixth warship, the USS San Antonio, to the Mediterranean, while President Obama decides to refrain the attack until the authorization of the Congress.

31 August
President of the United States Barack Obama gave a speech in the White House rose garden in which he announced that he would seek authorization from Congress before using American military forces to intervene in the Syrian civil war. In the speech, he announced that he was "prepared to give that order," referring to ordering a strike on Syria. Obama argued that it was necessary to intervene because the recent chemical weapons attack in Syria "risks making a mockery of the global prohibition on the use of chemicals weapons" and that it put U.S. regional allies that share a border with Syria in danger.

September 2013

3 September
Israel launches two missiles to test its advanced defence system. The launch has been detected by multiple Russian warships in the area. The naval battle group led by USS Nimitz is deployed in the area, while USS Mahan is retired and reaches its homeport in Norfolk, Virginia. It was reported that Pro-Syrian government forces have retaken the town of Ariha, after losing it a week before.

4 September
In response to the speech given by President Obama on 31 August, the United States Senate Committee on Foreign Relations approved the Authorization for the Use of Military Force Against the Government of Syria to Respond to Use of Chemical Weapons (S.J.Res 21). If the bill passes, it would allow the president to take direct action for up to 90 days; it specifically forbids putting "boots on the ground." The bill still needs to be approved by the full United States Senate and the United States House of Representatives before it would become law and thereby authorize US military intervention into the Syrian civil war.

At the same time, the number of Syrian refugees in Europe is constantly growing.

8 September
Rebels, including al-Nusra Front forces, briefly took control of the historic Christian town of Maalula.

15 September
Syrian army has completely regained Maaloula.

16 September
Abu Abdullah Libi, one of leaders of the Islamic State of Iraq and Syria, was killed by FSA operatives close to a village of Hazano.

October 2013

16 October
The government took full control of the town of Buweida in the Damascus Suburbs.

17 October
Major General Jamaa Jamaa, Syrian General and head of the Military Intelligence in Deir Ezzour, was killed in the Reshdiya neighbourhood of Deir ez-Zour.

30 October
During the Aleppo offensive, the Syrian Army captures Al-Safira.

November 2013

1 November
Syrian Army captures the village of Aziziyeh on the northern outskirts of Safira.

7 November
On 7 November, the Syrian army backed by Hezbollah, Al-Abbas brigade and the National Defense Force retook the key town of Al-Sabinah, south of Damascus. According to an opposition activist, military "progress on the ground without a doubt, because the regions were besieged for too long. This is normal." Abdel Rahman also blamed "divisions within the rebels."

13 November
Syrian army capture most of Hejeira in the Rif Dimashq Governorate.

15 November
Syrian army capture Tell Hassel.

Javed Akhtar, Mridula Garg chosen for Sahitya Akademi Awards

Bollywood lyricist-scriptwriter Javed Akhtar, Hindi novelist Mridula Garg and renowned Bengali poet Subodh Sarkar are among those selected for this year's Sahitya Akademi Award.



The Akademi said eight books of poetry, four essays, three novels, two short stories, two travelogues, an autobiography, a memoir and one play have been chosen for the coveted award. "We couldn't announce the award in Assamese and Gujarati language due to some unavoidable reasons. We will announce those awards very soon," K Sreenivasarao, Secretary, Sahitya Akademi told reporters in New Delhi on Wednesday.



Akhtar has been chosen for "Lava", his compilation of 55 Urdu poems. The Awards are recommended by distinguished jury members, representing 22 Indian languages and approved by the Executive Board of the Akademi, which met on Wednesday under the Chair of Sahitya Akademi President Vishwanath Prasad Tiwari.

The award, a literary honour conferred to writers for their outstanding works in the field of literature, is scheduled to be conferred in New Delhi on 11th March during the annual Akademi's Festival of Letters. "We are happy to say that this year we've been able to confer awards in each category...from poetries, novels, essay collections to autobiography, play and travelogues," Sreenivasarao said.

Short story category award was bagged by Tamsula Ao (English- Laburnum for my head), Mohi-ud-Din Reshi (Kashmiri- Aina Aatash). C N Ramachandran (Kannada- Akyana-Vyakyana), Tukaram Rama Shet (Konkani- Manmotayam), Satish Kalasekar (Marathi- Vachanaryachi Rojanishee) and Katyani Vidmahe (Telugu- Sahityaakashmlo Sagam) bagged the award for their respective book of essays.Makhonmani Mongsaba (Manipuri-Chinglon Amadagi Amada) and Man Bhadnur Pradhan (Nepali-Manka Lahar Ra Raharharu) have been chosen for their travelogues.

The bulk of the awards went to poets.

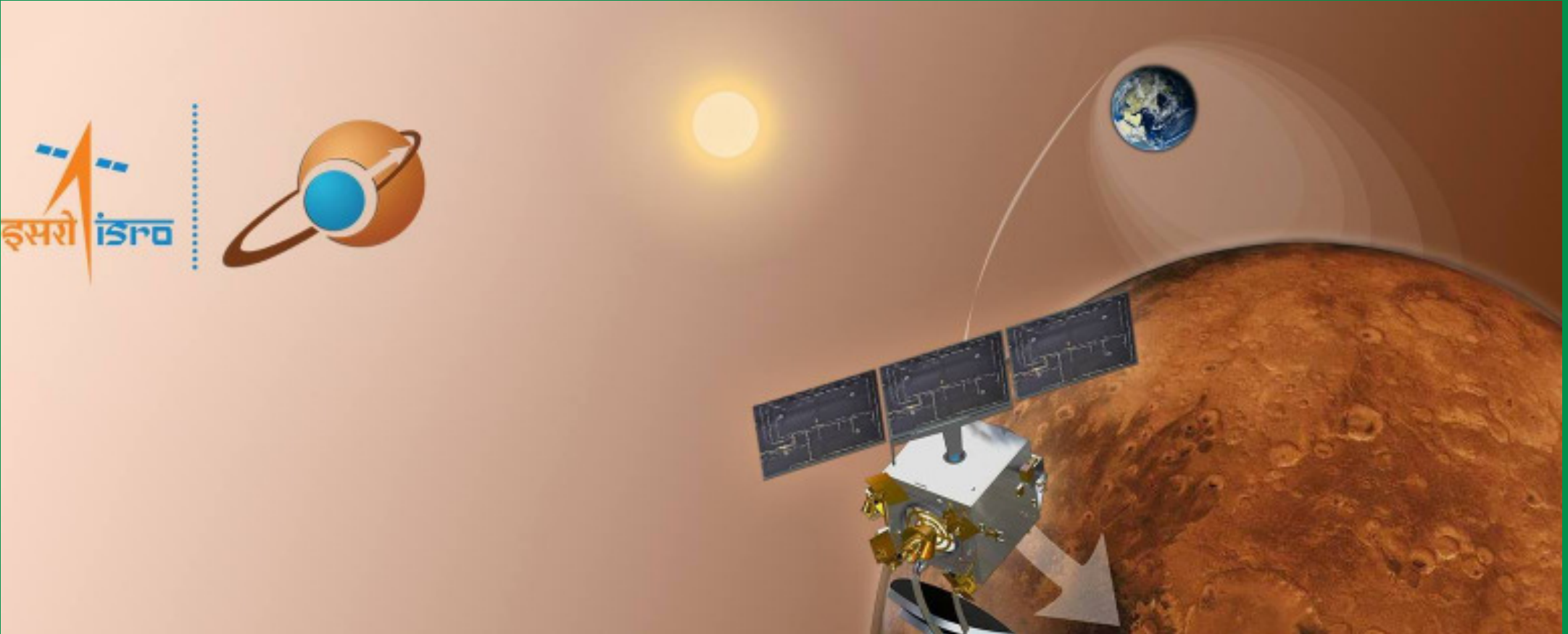
Subodh Sarkar (Bengali- Dwaipayana Hrader Dhare), Anil Boro (Bodo-Delphini Onthai Mwdai Arw Gubun Gubun Khonthai) Sitaram Sapolia (Dogri-Doha Satsai), Ambika Dutt (Rajasthani- Aanthoyi Nahi Din Hal) Radhakant Thakur (Sanskri- Chaladuravani), Arjun Charan Hembram (Santhali-Chanda Bonga) and Namdev Tarachandani (Sindhi-Mansh-Nagari).

Mridula Garg (Hindi- Miljul Man), R N Joe D' Cruz (Tamil-Korkai) and Manmohan (Punjabi- Nirvaan) won it for novels.

Sureshwar Jha (Maithili- Sangharsh Aa Sehanta) won the award for memoir, M N Paloor (Malayalam- Kathayillathavante Katha) for autobiography and Bijoy Mishra (Odiya-Banaprastha) for a play.

ISRO successfully performs first TCM on Mars Orbiter

The first Trajectory Correction Manoeuvre of India's maiden mission to Mars was carried out successfully by ISRO scientists on the spacecraft on Wednesday, which is presently travelling some 2.9 million kms away from Earth. "The first Trajectory Correction Manoeuvre (TCM) of Spacecraft was carried out successfully at 06:30 hrs (IST) by firing the 22 Newton Thrusters for a duration of 40.5 seconds. The spacecraft is travelling at a distance of about 29 lakh (2.9 million) km away from Earth," ISRO said in a statement.



The TCMs fine tune the trajectory of the spacecraft to keep it travelling in the intended track towards the red planet.

Ever since the successful Trans-Mars Injection on December 1, MOM navigators were spending days ranging and measuring the spacecraft's velocity and precisely determined its flight path to come up with the required correction in the path, ISRO said in its official Facebook page.

"Based on this, the firing duration and delta-v has been calculated which will correct the deviations before they have a chance to grow large. During the Trajectory Correction Manoeuvre, accelerometers on board MOM gives the information when the desired delta-v is achieved," it informed.

Earlier, the spacecraft was rotated from its nominal orientation to the orientation required for the first TCM.

Today's correction was carried out by the computer on board the spacecraft, since the amount of time required for the signal to go and return was about 20 seconds, as MOM was already travelling about some 2.9 million km away, ISRO said.

"MOM team is gaining hands-on experience in handling the communication delay as it keeps increasing gradually," it added.

Four TCMs are planned to fine tune the trajectory of the spacecraft so as to keep it in the precise intended track.

ISRO had earlier said MOM was not taking the shortest route to the Red Planet, since accelerating and later decelerating to match the planet's speed would require an extremely large amount of fuel in that option.

The propulsion system of MOM, which is to travel a total distance of about 680 million km, will be using monomethyl hydrazine as fuel and dinitrogen tetroxide as oxidizer during all the four TCMs.

The Mars Orbiter had earlier crossed a major milestone in the country's space history by venturing out of Earth's sphere of influence for the first time in an attempt to reach the red planet's orbit. ISRO performed the trans-Mars injection, a "crucial event" intended for hurling its Mars Orbiter spacecraft into the planned orbit around the Sun in the early hours of December 1, marking the first step towards the 300 day voyage to reach the orbit of the red planet after crossing roughly 680 million kilometre.

The national space agency's PSLV C 25 successfully injected the 1,350-kg 'Mangalyaan' Orbiter (Mars craft) into the orbit around the earth some 44 minutes after the launch at 2.38 PM from the Satish Dhawan Space Centre at Sriharikota on November 5, marking the successful completion of the first stage of the Rs 450-crore mission.

Ashes Test: Aus beat Eng by 8 wickets to take 4-0 lead

Chris Rogers smashed just his second Test century in emphatic style to lead Australia to an eight-wicket win over England and a fourth successive Ashes victory before tea on the fourth day of the fourth Test on Sunday.



Resuming on the overnight score of 30-1, David Warner was caught behind off Ben Stokes (1 for 50) for 25 before Rogers and Shane Watson shared a second-wicket partnership of 136 to aggressively chase down the victory target of 231.

Rogers was caught behind of Monty Panesar (1 for 41) for 116 attempting to cut through the off-side, ending a 155-ball knock with 13 boundaries.

Watson scored a classy 83, while Michael Clarke added 6 to help see the Australians to 231-2 and the win.

The 36-year-old Rogers produced the innings of his nine-Test career to claim his first century on home soil in emphatic fashion.

He brought up the milestone driving Jimmy Anderson for four through cover and raised his bat to the resounding applause of the 38,522 fans at the Melbourne Cricket Ground.

"Amazing feeling to get 100 in a Boxing Day Test and get the win," Roger said.

Watson reached his half century off the first ball of the next over when he cut Bresnan for four.

Australia had already clinched the five Test series in commanding fashion with a third-straight win at Perth on 17th December, marking a dramatic reversal of form after losing the previous Ashes series 3-0 in England earlier this year.

Despite the series already being decided, more than 271,860 fans were on hand at the MCG over the four days, including a world record single day's attendance of 91,092 on day 1.

England looked tired and dejected in the field Sunday as Australia confidently batted toward an increasingly inevitable win.

England will rue some early missed chances after Jonny Bairstow failed to move on a Rogers edge off Stuart Broad, leaving a difficult attempt that Cook let slip through for four when Rogers was on 19.

Cook then put down a straightforward edge from Warner at first slip two overs later off Stokes.

Stokes gained revenge shortly after when Warner added just three runs before becoming the only wicket of the morning.

Warner, who made just 9 in the first innings Saturday, was again attempting a big shot off a short ball only to edge to the wicketkeeper.

England followed their most dominant performance this series with perhaps its poorest when it dismissed Australia for 204 early on the third day only to suffer two dramatic collapses of 3-1 and 5-6 either side of tea.

Nathan Lyon (5-50) took five wickets to help dismiss England for 179 and usher Australia in for its victory chase shortly before stumps Saturday.

TEJAS Team Sets New Record of 500 Flights in One Calender Year

TEJAS attained another significant milestone on 27th Dec 2013, by flying the 500th sortie this year, the highest achieved in a calendar year thus far.



The achievement is significant, given that the highest number of sorties attained earlier in a calendar year was less than 300 sorties This feat follows close on the heels of attaining IOC on 20th December 2013.

The pace of the programme continues with greater enthusiasm towards achieving newer milestones. Congratulating the Tejas team Avinash Chander, SA to RM and Secretary Deptt of Defence R&D said, "the single most important factor behind the achievements is the synergy of teamed efforts of ADA, DRDO, CEMILAC, HAL and IAF." Year 2013 has been exceptionally successful year for Tejas in achieving key milestones while participating in seven detachments all over country, an excellent achievement in itself.

Noteworthy accomplishments are In-flight relight (shutting off and then reigniting the single engine), high energy brake testing, flight envelope expansion, R73E missile firing with radar guidance, Air to ground weapon tests, Emergency jettisoning of entire store, Aircraft in wake tests, Wet Runway trials, demonstration of Swing Role capability during exercise IRON FIST. All these led to a big leap towards achieving IOC 2.

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