

2021

Year calculated
from

Pre-Scientific Era

Sources are listed at bottom.

Before CHRIST (BC) / Before Current Era (BCE)							
DATE				EVENT	Topic	Source	Colour index B.C.
YEARS AGO	YEAR	MONTH	DAY				
				Mesopotamia: the oldest known civilization between approximately 5 000 to 1596 B.C.	Civilization	Civilization v1, pp.17 - 23.	Egyptian Culture Greek and Roman
6733	4713	January	1	At noon (12h00) on this date is Day One of the Julian Day Calendar used by Astronomers. This calendar was created in 1583 (See 1583) and backdated to this day	Calendar	Calendar, pp.284 - 5.	Arabic
6261	4241			Egypt: Predynastic Era approximately 4 000 to 3 100 B.C. Start of Egyptian Calendar and 1st known date	Civilization Calendar	Civilization v1, pp.23 - 4. Calendar, p.21.	Chinese Culture Korean Culture Polynesian Culture
6024	4004	October	23	On this date, according to James Ussher (1581 - 1656), God created the World.	Calendar	Calendar, p.331; Faber, p.71.	America's Indian Culture
5520	3500			Invention of the wheel (Wheeled transport appears in Mesopotamia)	Milestone Event	Mapping Time, p.145.	Important non-scientific events
5520	3500			Construction of Newgrange (Ireland)	Observatory	Cambridge, pp.2 - 3.	
5220	3200			Invention of writing by the Sumerians	Milestone Event	Mapping Time, p.145.	Celestial Event
5020	3000			Construction of Stonehenge (England)	Observatory	Cambridge, pp.4 - 5.	Milestone Events
5020	3000			Egyptian Religious Calendar	Calendar	Cambridge, pp.24 - 25.	
5020	3000			Egyptian Administrative Calendar	Calendar	Cambridge, pp.24 - 25.	
5134	3114			Current Maya Great Cycle Begins	Calendar	Calendar Time Line	
4377	2357			Egypt: Old Kingdom approximately 2 700 to 2 200 B.C. Early Chinese Calendar by Emperor Yao	Civilization Calendar	Civilization v1, p.24. Calendar Time Line	
4120	2100			India: Indus Civilization approximately 2 500 to 1 500 B.C. Sumerian 360 day Calendar	Civilization Calendar	Civilization v1, p.111. Calendar Time Line	
				Egypt: Middle Kingdom approximately 2 050 to 1 800 B.C.	Civilization	Civilization v1, p.25.	
				Hittite Civilization approximately 2000 to 1 200 B.C.	Civilization	Civilization v1, p.33.	
				Greek: Minoan (Aegean) civilization approximately 2 000 to 1 200 B.C.	Civilization	Civilization v1, p.46.	
				Greek: Mycenaean (Aegean) civilization approximately 2 000 to 1 380 B.C.	Civilization	Civilization v1, p.48.	
1699	1700			Old Babylon: Venus Records (place value numerical system)	Mathematics	Cambridge, pp. 23 -24	
				China: Shang Dynasty approximately 1 700 to 1 122 B.C.	Civilization	Civilization v1, p.125.	
				Egypt: New Kingdom approximately 1 570 to 1 090 B.C.	Civilization	Civilization v1, p.25.	
				India: Aryan Invasion and Early Verdic Age 1 500 to 1 000 B.C.	Civilization	Civilization v1, p.113.	
				Egypt: Period of Decadence 1 090 to 332 B.C.	Civilization	Civilization v1, p.25.	
				Greek: Homeric Age (Greek Dark Ages) approximately 1 150 to 750 B.C.	Civilization	Civilization v1, p.50.	
				China: Chou Dynasty approximately 1 122 to 221 B.C.	Civilization	Civilization v1, p.126.	
				Brahmanism: Approximately 1000 B.C.	Religion	Civilization v1, p.114.	
2920	900			Babylonian 'Enuma Anu Enlil' takes definitive form (Contains 7 000 omens)	Astrology	Cambridge, pp.26 - 28.	
				Hinduism: Upanishads composed between 800 and 600 B.C.	Religion	Civilization v1, p.115.	
				Greek: Hellenic Age approximately 750 to 336 B.C. (Golden Age centred in Athens about 600 B.C.)	Civilization	Civilization v1, p.50.	
				Rome: According to Myth the Roman Empire was founded c.753 B.C. by the twin brothers Romulus and Remus. It was a Kingdom between (759 ?) and 713 B.C. The Kings were overthrown and the Roman Republic came into being.	Civilization	Civilization v1, p.79.	

2779	759	Calendar of the Roman Kingdom / Republic c.759 BC to 45 BC	Calendar	
2720	700	Systematic Babylonian records	Catalogue	Cambridge, pp.26 -28.
2020		Greek Cosmology 600 - 300 BC	Cosmology	Cambridge, pp.29 - 37.
2620	600	Thales of Miletus (c.625 - c.547 BC) - nature more intelligible than the superficial appearance of endless variety suggest.	Cosmology	Cambridge, p.29.
		Confucius (551 479 B.C.)	Religion	Civilization v1, p.128.
		Buddism: Gautama called Buddha "The Enlightened One" (563? - 483 B.C.)	Religion	Civilization v1, p.116.
2020		Pythagoras (c570 - 480 BC): Geometry	Mathematics	Discoveries, p.66.
2570	550	Anaximander of Miletus (c.610 - c.545 BC) - explains forms of heavenly bodies.	Cosmology	Cambridge, p.29.
		Rome: Early Republic 509 to 133 B.C.	Civilization	Civilization v1, p.81.
2470	450	Babylonian identify Metonic Cycle	Cosmology	Cambridge, p.27.
2470	450	Greek recognize sphericity of Earth	Cosmology	Cambridge, p.31.
2452	432	Meton (Athenian Astronomer) discover the Metonic Cycle	Observation	Calendar, p.34.
2420	400	Plato (427 348/7 BC) poses problems of Planets	Cosmology	Cambridge, p.30.
2370	350	Eudoxus of Cnidus (c.400 - c.347 BC) - model of spheres	Cosmology	Cambridge p.34
2370	350	Aristotles world Picture (384 - 322 BC)	Cosmology	Cambridge, p.23
2020		Euclid (356 - 323 BC): Geometry	Mathematics	Discoveries, p.66.
		Greek: Hellenistic Era (Alexander the Great) approximately 336 to 200 B.C.	Civilization	Civilization v1, pp.69 - 77.
2320	300	First use of zero in Babylon c.300 BC	Mathematics	Discoveries, p.74.
2300	280	Aristarchus (c.310 - 230 BC) - distances of the Sun and Moon	Observation	Cambridge, p.38; Discoveries, p.70.
2283	263	Liu Hui: Calculated Pi more precisely than Archimedes.	Mathematics	Discoveries, p.68.
2270	250	Archimedes (c.287 - c.212: Pi, squaring the circle. (Look 263 BC, Lui Hui)	Mathematics	Cambridge, p.37; Discoveries, p.68.
		China: Han Dynasty approximately 202 to A.D. 220	Civilization	Civilization v1, p.134.
2220	200	Erastheneis (c.276 - c.195) - size of the Earth / deduced the tilt of the Earth's axis of rotation.	Observation	Cambridge, p.39. / Calendar, p.35.
2220	200	Appolonius - eccentres, epicycles, deferents	Cosmology	Cambridge, p.39.
2184	164	Halley's Comet (September to November)	Celestial Event	Cambridge, p.27
2180	160	Horoscopium, precursor to Astrolabe used by Hipparchus of Nicaea, c.160 BC.	Instrument	Discoveries, p.82.
		Rome: Late Republic 133 to 30 B.C.	Civilization	Civilization v1, p.86.
2140	120	Hipparchus - models for Sun, Moon. Star catalogue. Precession	Cosmology / Catalogue	Cambridge, pp.40 -41.
2066	46	Known as the "Year of Confusion". See 45 BC. 46 BC had 445 days. Longest calendar year in history.	Calendar	Calendar, p.45.
2065	45 January	1 Julian Calendar introduced. Calendar was off by 80 days.	Calendar	Cambridge, p.108. / Calendar, p.45.
		Rome: Pax Romana 30 B.C. to A.D. 180	Civilization	Civilization v1, p.91.

EVENT	Topic
BIRTH OF JESUS CHRIST The true date of Christ's birth is unknown but by tradition it is celebrated on December 25th. This event is the central point of our Calendar. Note that Christ was not born in the year zero. There is no such year in our Calendar. One year before Christ is 1BC, and one year after is 1AD. Therefore the 2nd millenium ended in the year 2000, and the 3rd millenium started in 2001, contrary to popular opinion	Religion

ANNO DOMINI (AD) After CHRIST also known as Common Era (CE)

				1st Century			
DATE				EVENT	Topic	Source	Colour index 1st Century
YEARS	YEAR	MONTH	DAY				
<u>AGO</u>							Egyptian Culture
2020	1						Greek and Roman
1971	50						Arabic
1921	100						Chinese Culture

- Egyptian Culture
- Greek and Roman
- Arabic
- Chinese Culture
- Korean Culture
- Polynesian Culture
- America's
- Indian Culture
- Important non-scientific events
- Celestial Event

				2nd Century			
DATE				EVENT	Topic	Source	Colour index 2nd Century
YEARS	YEAR	MONTH	DAY				
<u>AGO</u>							Egyptian Culture
1920	101						Greek and Roman
1891	130			Ptolemy - Almagest, Planetary hypotheses, Tetrabiblos	Cosmology	Cambridge, pp.42 - 43.	Arabic
1821	200						Chinese Culture

- Egyptian Culture
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3rd Century							
DATE				EVENT	Topic	Source	Colour index 3rd Century
YEARS	YEAR	MONTH	DAY				
AGO							
1820	201						
1771	250						
1721	300			c. 300 the Maya discover zero	Mathematics	Calendar Time Line	

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4th Century							
DATE				EVENT	Topic	Source	Colour index 4th Century
YEARS	YEAR	MONTH	DAY				
AGO							
				Medieval Christendom	Civilization		
1700	321			Sunday / Seven Day week formulated	Calendar	Calendar Time Line	
				Rome: 330 Constantinopel (Istanbul) created by Emperor Constantine (To become the capital of the Byzantime Empire)	Civilization	Civilization v1, p.169.	
1696	325			Council of Nicea formulate Easter	Calendar	Calendar Time Line	
				Rome: In 395 the empire officially split into East (Byzantine) and West Roman Empires. The Byzantine Empire (Easter Europe and the Middle East) continue until 1261; Western Empire (Western Europe) decline into turmoil until A.D. 800.	Civilization	Civilization v1, p.148.	
1621	400						

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5th Century							
DATE				EVENT	Topic	Source	Colour index 5th Century
YEARS	YEAR	MONTH	DAY				
AGO							
1620	401						
1522	499			Aryabhata Indian Calendar (365d 8h 36m 0s)	Calendar	Calendar Time Line	
1521	500			India introduces decimal system with the zero, c. 500.	Mathematics	Discoveries, p.74.	

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6th Century					
DATE		EVENT	Topic	Source	Colour index 6th Century
YEARS	YEAR	MONTH	DAY		
AGO					
1520	501				
1471	550				
1421	600				

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7th Century					
DATE		EVENT	Topic	Source	Colour index 7th Century
YEARS	YEAR	MONTH	DAY		
AGO					
			Inca: Civilization originated before Christ but start to spread by 600 A.D. (Equador to Chile)	Civilization	Civilization v1, p.373.
			Mayan: Civilization reached its height between 600 and 1200 A.D. (Mexico and Guatemala)	Civilization	Civilization v1, p.366.
1399	622		Monammad flees Mecca / Start of Muslim Calendar	Religion / Calendar	Calendar Time Line
1389	632		Death of Mohammad	Religion	
1321	700				

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8th Century					
DATE		EVENT	Topic	Source	Colour index 8th Century
YEARS	YEAR	MONTH	DAY		
AGO					
1320	701				
1288	733		Kanaka arrives in Bagdad / Teach Hindu Mathematics and Astronomy	Mathematics / Cosmology	Calendar Time Line
1221	800		Holy Roman: Charlemagne crowned Emperor by the Pope on Christmast day 800. Feudalism now entrenched in Western Europe.	Civilization	Civilization v1, p.231.

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9th Century						
DATE		EVENT	Topic	Source	Colour index 9th Century	
YEARS	YEAR MONTH DAY				African Culture	Greek and Roman
AGO						Arabic
	1220 801					
	1145 876	First use of zero in Eurasia.	Mathematics	Calendar Time Line; Discoveries, p.74.		Chinese Culture
	1121 900					Korean Culture
						Polynesian Culture
						America's
						Indian Culture
						Important non-scientific events
						Celestial Event

10th Century						
DATE		EVENT	Topic	Source	Colour index 10th Century	
YEARS	YEAR MONTH DAY				African Culture	Greek and Roman
AGO						Arabic
	1120 901					Chinese Culture
	1071 950					Korean Culture
	1021 1000					Polynesian Culture
						America's
						Indian Culture
						Important non-scientific events
						Celestial Event

11th Century						
DATE		EVENT	Topic	Source	Colour index 11th Century	
YEARS	YEAR MONTH DAY				African Culture	Greek and Roman
AGO						Arabic
		Astrolabe [revolving starmap] enters West (Look 160 A.D.)	Instrument	Cambridge, p.64.		Chinese Culture
	1015 1006	Supernova visible to the naked eye	Celestial Event			
	967 1054	Supernova visible to the naked eye recorded in Chinese annals. (Crab Nebula)	Celestial Event	Cambridge, p.307.		Korean Culture
		Ottoman Turks: The Seljuk turks conquer modern day Bagdad. Start of a mighty Islam Empire to last until 1917.	Civilization	Civilization v1, p.191.		Polynesian Culture
		Crusade: The first of seven crusades against the Ottoman Turks was in 1095. The last crusade was in 1212.	Civilization	Civilization v1, p.254.		America's
	921 1100					Indian Culture
						Important non-scientific events
						Celestial Event

12th Century						
DATE		EVENT	Topic	Source	Colour index 12th Century	
YEARS	YEAR MONTH DAY					
AGO						
		Greek and Arabic scripts translated to European languages	Cosmology	Cambridge, p.72.		
901	1120	Cairo Observatory; 1120 - 25	Observatory	Cambridge, p.56.		
821	1200	Mapungubwe Settlement Established	Civilization			

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13th Century						
DATE		EVENT	Topic	Source	Colour index 13th Century	
YEARS	YEAR MONTH DAY					
AGO						
		Aztec: Rise of empire around 1200. Create capital Tenochtitlan at present day Mexico City in 1325. Cortez finally destroyed the Aztec	Civilization	Civilization v1, p.371.		
		New Quadrant (combination of quadrant and astrolabe) invented by Jacob ben Mahir (c.1236 - c.1304)	Instrument	Cambridge, p.81.		
762	1259	Maragha Observatory (Astronomer Nasir al-Din al-Tusi 1201 - 74)	Observatory / Astronomer	Cambridge, p.58.		
	1260	Mongolian Empire: Birth of Temujin (1162) who became known as "Ghenghis Khan" (1206). Mongolians dominant force in Asia 1260 - 1360.	Civilization	Civilization v1, p.338.		
	1261	Byzantium: Constantinople conquered by Palaeologus if Nicaea. This is the end of the Byzantium (East Roman Empire)	Civilization	Civilization v1, p.175.		
722	1299	Glass lenses invented by Alexandro di Spina	Instrument	Discoveries, p.92.		
		Cross staff invented by Levi ben Gerson (1288 - 1344)	Instrument	Cambridge, p.81.		

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Important non-scientific events
Celestial Event

14th Century						
DATE		EVENT	Topic	Source	Colour index 14th Century	
YEARS	YEAR MONTH DAY					
AGO						
720	1301					
		Hundred Years War: Large scale disruption in Europe due to warfare. 1337 - 1453.	Political	Civilization v1, p.384.		
671	1350					
621	1400					

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Celestial Event

15th Century						
DATE		EVENT	Topic	Source	Colour index 15th Century	
YEARS	YEAR MONTH DAY					
AGO						
449	1420	Samarkand Observatory (Astronomer Ulugh Beg 1394 - 1449)	Observatory / Astronomy	Cambridge, p.58.		
600	1421	Chinese Expedition sail around the world 1421 -3. Explore and map all the continents except Europe. Very Controversial claim.	Expedition / World Event	1421		
551	1470	Invention of the Printing Press	Milestone Event	Calendar Time Line		
564	1457	Ottoman Turks invades Constantinople. (Leads to struggle over spice trade and eventually culminate in Voyages of Discovery).	Civilization	Civilization v1, p.324.		
548	1473	Nicholas Copernicus (1473 - 1543) born in Torun, Poland	Astronomer	Cambridge, p.90.		
547	1474	Peurbach (1423 - 61) - "Theoricae novae planetarium" (New theory of the Planets)	Cosmology	Cambridge, pp.88 - 89.		
533	1488	Voyages of Discovery: Vasco Bartholomeu Dias reaches Alogoa Bay. 1487 - 88.	World Event			
600	1492	Voyages of Discovery: Christopher Columbus reach West Indies. 12 October 1492.	World Event	Civilization v1, p.475.		
528	1493	Bull of Demarcation: Pope devided world in two halves so as to avoid conflict between Spanish and Portuegese ambitions.	Civilization	Civilization v1, p.475.		
523	1498	Voyages of Discovery: Vasco Da Gama sail to India. 1497 - 99.	World Event	Civilization v1, p.476.		
		Renaissance: Height of Renaissance 1500 - 1530.	Civilization	Civilization v1, p.410.		

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Important non-scientific events

Milestone Events
Celestial Event

Beginnings of Scientific Era

16th Century to 1582 (Pre-Gregorian Calendar)						
YEARS	DATE		EVENT	Topic	Source	Colour index 16th Century
AGO	YEAR	MONTH	DAY			
511	1510			D'Almeida and raiding party killed in skirmish with Khoisan in the vicinity of the terrain where the Royal Observatory at the Cape of Good Hope is situated today.	History: South Africa	
500	1521			Aztec: Hernando Cortez conquer Aztec. 1521.	Civilization	Civilization v1, p.477.
500	1521			Protestant Reform: Luther breaks away from Catholic Church. 1521.	Religion	Civilization v1, p.434.
490	1531			Inca: Francisco Pizarro conquer Inca. 1531.	Civilization	Civilization v1, p.477.
490	1531			Comet that later became known as Halley's Comet	Celestial Event	Cambridge, pp.172 - 174.
478	1543			1543: The year SCIENCE began - Copernicus and Vesalius (Statement made with Poetic License)		
478	1543			Andreas Vesalius (1514 - 64) "Fabrica" (On the Fabric of the Human Body)	Milestone / Medical Science	Faber, p.5.
478	1543			Copernicus - "De revolutionibus" (On the Revolutions of Heavenly Spheres)	Cosmology / Astronomer	Cambridge, p.90.
475	1546	December	14	Tycho Brahe (1546 - 1601) born in Skaane (now in Sweden)	Astronomer	Cambridge, p.98.
457	1564	February	15	Galileo Galilei (1564 - 1642) born in Pisa.	Astronomer	Cambridge, p.122.
450	1571	December	27	Johannes Kepler (1571 - 1630) born in Weilder Stadt near Stuttgart	Astronomer	Cambridge, p.115.
449	1572			"Tycho's Nova"	Celestial Event	Cambridge, pp.101 - 104.
446	1575			Istanbul Observatory 1575 - 80 (Astronomer Taqi al-Din)	Observatory / Astronomer	Cambridge, pp.56 -58.
445	1576			Tycho Brahe Observatory at Hven 1576 - 97	Observatory	Cambridge, p.104.
444	1577			Tycho Brahe finds comet to be celestial	Celestial Event / Cosmology	Cambridge, pp.101 - 104.
431	1590			Microscope invented by Hans and Zacharias Janssen	Science	Discoveries, p.110.

Important non-scientific events
South Africa: Political

South Africa: Astronomy
Astronomy (excluding South Africa)
Science (excluding Astronomy)
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In 1582 the Gregorian Calendar was instituted in Catholic Country's. Between 1582 to 1752 all of Europe implemented the Gregorian Calendar. The exception was Germany who partially accepted the Calendar in 1700 and fully in 1775. Russian only accepted the Calendar in 1917. Thus the dates given below is indicated in the Month column as either Julian Calendar (JC) of Gregorian Calendar (GC)

Calendar

16th Century from 1582 (Julian and Gregorian Calendar runs concurrently)

DATE				EVENT	Topic	Source
YEARS	YEAR	MONTH	DAY			
AGO						
439	1582	October (GC)	15	Gregorian Calendar (10 days omitted from Calendar / 5 - 14 October 1582)	Calendar	Cambridge, p.108. / Calendar, pp.267 - 82.
438	1583			Julian Day Calendar. Justus Scalinger (1540 - 1609) implement a new Calendar that counts a day at a time and backdated to noon on 1 January 4713 BC (a date he calculated as the Creation of the Earth) Astronomers use this Calendar.	Calendar	Calendar pp.284 -5.
438	1583			The Provinces of the Netherlands adopted the Gregorian calendar individually. Most adopted the GC between December 1582 to February 1583 (except for Frisia and Groningen who adopted 1701)	Calendar / South Africa: Political	https://www.sizes.com/ti/me/cal_Gregadoption.htm
437	1584			Between 1582 - 84 most Catholic countries accept and switched over to Gregorian Calendar	Calendar	Calendar p.vi
425	1596			Kepler - "Cosmographic Mystery"	Cosmology	Cambridge Chronology

Colour index 16th Century

Important non-scientific events

South Africa: Political

South Africa: Astronomy

Astronomy (excluding South Africa)

Science (excluding Astronomy)

Milestone Events

Celestial Event

17th Century / 1st Half /1601 - 1650 (Julian and Gregorian Calendar runs concurrently)

DATE				EVENT	Topic	Source
YEARS	YEAR	MONTH	DAY			
AGO						
		October				
420	1601 (JC)		24	Tycho Brahe die in Prague (1546 - 1601)	Astronomer	Cambridge, p.98.
419	1602			Tycho Brahe's star catalogue published	Catalogue	Cambridge, p.104.
419	1602	March	20	Founding of the VOC (Dutch East India Company)	Political: South Africa	
417	1604			Kepler's Nova	Celestial Event	Cambridge, pp.198 - 201.
414	1607			Comet that later became known as Halley's Comet	Celestial Event	Cambridge, pp.172 - 174.
412	1609			Kepler - "New Astronomy": First two laws	Science	Cambridge, p.119.
412	1609			Galileo's first telescopic observations	Observation	Cambridge, p.123.
412	1609			De Facto independence of the North of Holland from the Spanish controlled Holy Roman Empire after hostilities lasting from 1585 to 1609	Political: South Africa / Calendar	
411	1610 (GC)	January	7	Galileo's first observation of Jupiter. Discover 4 Moons (This event was to have far reaching results. It helped to inaugurate science as a discipline and helped to overturn accepted worldviews of the time.)	Milestone / Observation / Science / Cosmology	Cambridge, p.125.
411	1610			Galileo - "Starry Messenger"	Cosmology / Journal	Cambridge, p.130.
410	1611			Kepler design "astronomical telescope"	Telescope	Cambridge, p.142; p.164.
408	1613			Galileo - "Letters on Sunspots"	Cosmology	Cambridge, p.130.
				Thirty Years War: 1618 - 1648.	Political	Civilization v1, p.458.
402	1619			Kepler - "The Harmony of the World": Third Law	Science	Cambridge, p.120; p.143.
395	1626			Christoph Schneider publish "Rosa Ursina" on sunspots between 1626 - 30	Cosmology	Cambridge, p.129.
394	1627			Kepler - "Prutenic Tables" also known as "Rudolphine Tables"	Catalogue	Cambridge, p.130.
		November				
391	1630 (GC)		15	Kepler dies at Regensburg (1571 - 1630)	Astronomer	Cambridge, p.115.
390	1631	November	7	Transit of Mercury: 1st Transit to be predicted (by Kepler) Observed by Pierre Gassendi	Celestial Event	
390	1631	December	6	Transit of Venus: 2nd Transit to be predicted (by Kepler)	Celestial Event	
389	1632			Galileo - "Two Great World Systems"	Cosmology	Cambridge, p.130.
389	1632			Mechanical Calculator invented by Wilhelm Schickard (1592 - 1635)	Mathematics	Discoveries, p.128.
384	1637			Analytical Geometry (combining geometry and algebra) invented by Rene Descartes (1596 - 1650)	Mathematics	Discoveries, p.132.
382	1639	December	4	Transit of Venus	Celestial Event	
381	1640			Gascoine's micrometer	Instrument	Cambridge, p.164.
		January				
379	1642 (GC)			Galilei dies (1564 - 1642)	Astronomer	Cambridge, p.122.
		December				
379	1642 (JC)		25	Isaac Newton born at Lincolnshire, England (1642 - 1727)	Astronomer	Cambridge, p. 159.
377	1644			Descartes - "Principles of Philosophy"	Cosmology	Cambridge Chronology

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Important non-scientific events

South Africa: Political

South Africa: Astronomy

Astronomy (excluding South Africa)

Science (excluding Astronomy)

Milestone Events

Celestial Event

17th Century / 2nd Half /1651 - 1700 (Julian and Gregorian
Calendar runs concurrently)

DATE				EVENT	Topic	Source
YEARS	YEAR	MONTH	DAY			
AGO						
369	1652			1652 Dutch Colonists arrive to settle at the Cape	History: South Africa	
362	1659			Christiaan Huygens (1629 - 95) elucidates Saturns rings	Observation	Cambridge, p.150.
361	1660			Royal Society of London founded	Society	Cambridge, p.145; p.257.
358	1663			James Gregory (1638 - 75) designs reflector	Telescope	Cambridge, p.152.
357	1664			Record of Comet (South Africa)	Celestial Event	
356	1665			Start of Scientific Publications. "Philosophical Transactions" of the Royal Society of London.	Milestone / Journal	Cambridge, p.256.
355	1666			Paris Academy of Sciences founded	Society	Cambridge, p.166.
355	1666			Great Fire of London		
354	1667			Paris Observatory founded	Observatory	Cambridge, p.166.
354	1667			Mira's Period identified by Ismael Boulliau (1605 - 94)	Observation	Cambridge, p.201.
353	1668			Newton designs his telescope	Telescope	Cambridge, p.152.
349	1672			Cassegrain designs his telescope	Telescope	Cambridge, p.152.
349	1672			Newton shows white light's composition. Publish 'New Theory about Light and Colors'	Science	Cambridge, p.261.
346	1675			Greenwich Observatory founded	Observatory	Cambridge, p.178.
345	September 1676 (JC)		19	Observation started at Greenwich Observatory	Observatory	Cambridge, p.178.
344	1677			Edmond Halley visit St Helena Island to catalogue stars to solve longitude problems. Too cloudy	Observation	Cambridge, p.251.
342	1679			"Connaissance des Temps" founded. First year-book dedicated to astronomy.	Journal	Cambridge p.257.
342	1679			Binary system invented by G.W.F. von Leibniz (1646 - 1716)	Mathematics	Discoveries, p.142.
339	1682			Comet that later became known as Halley's Comet	Celestial Event	Cambridge, pp.172 - 174.
336	1685			Father Tachard, French Jesuit Priest, sets up observatory near the Castle on Cape Town. (Longitude problem)	Astronomer / Expedition	Astr SA, pp. 20 - 22.
334	1687			Johannes Hevelius dies (1611 - 87)	Astronomer	Cambridge, p.143.
334	1687			Newton - "Principia" (Mathematical Principles of Natural Philosophy)	Cosmology	Cambridge, p.162; p.235.
331	1690			Hevelius - Star Catalogue	Catalogue	Cambridge Chronology
331	1690			Jonn Flamsteed observe Asteroid Ceres but does not recognize it as such. (mistook it as a star)	Observation	Cambridge, p.191.
326	1695 June (JC)		8	Christiaan Huygens dies in The Hague (1629 -95)	Astronomer	Cambridge , p.129; p.150.
326	1695			Halley (c.1656 - 1742) recognizes that the comets of 1531, 1607 and 1682 may be the same comet and thus be periodic He predicts the return of the comet in 1758	Science	Cambridge, pp.172 - 174.
321	1700			Gregorian Calendar (see 1582) Potestant Germany partially accept the Calender reforms (full acceptance 1775)	Calendar	Calendar p.vi

Colour index 17th Century

Important non-scientific events
 South Africa: Political
 South Africa: Astronomy
 Astronomy (excluding South Africa)
 Science (excluding Astronomy)
 Milestone Events
 Celestial Event

18th Century / 1st Half / 1701 - 1752 (Julian and Gregorian Calendar runs concurrently)

DATE				EVENT	Topic	Source
YEARS AGO	YEAR	MONTH	DAY			
		January	12	Gregorian Calendar (see 1582) Frisia and Groningen begin use of Gregorian calendar. The rest of Holland already changed over to the Gregorian Calendar on 12 January 1583.	Calendar	Can't find proof but look at http://www.crystalinks.com/gregorian_calendar.html ; http://www.brainyhistory.com/events/1701/january_12_1701_39298.html
320	1701 (GC)					
316	1705			Peter Kolbe (1705 - 1713) was appointed as the first official Astronomer in S.A.	Astronomer	Astr SA, pp.26 - 28.
309	1712			First efficient steam engine developed by Thomas Newcomen (1663 - 1729) [Look 1765]	Mechanical	Discoveries, p.158.
300	1721			Halley's papers on symmetric star systems	Cosmology	Cambridge Chronology
296	1725			Flamsteed (1646 - 1719) - "British Catalogue" to help solve Longitude problem	Catalogue	Cambridge, p.179.
294	1727	March (JC)	20	Isaac Newton dies (1642 - 1727)	Astronomer	Cambridge, p.159.
293	1728			James Bradley (1693 - 1762) identified large mistakes made in earlier observations relating to the accurate positions of stars due to 'the aberration of light'	Science	Cambridge, p.206.
293	1728			Newton - "Systems of the World"		Cambridge, p.211; p.215.
292	1729			Achromatic lens designed by Chester Moor Hall (1703 - 71) (but did not pursue idea. Look Dollond 1758)	Instrument	Cambridge, p.152.
292	1729			Bradley's paper on the aberration of light (see 1728)	Science	Cambridge, p.213.
286	1735			Classification of flora by Carl von Linné (known as Linnaeus, 1707 - 78)	Biology	Discoveries, p.150.
283	1738	November (GC)	15	Wilhelm Friedrich Herschel (1738 1822) born at Hanover	Astronomer	Cambridge p.231.
279	1742			Bradley Astronomer Royal at Greenwich (1742 -)	Astronomer	Cambridge, p.206.
279	1742	January (JC)	14	Edmond Halley dies (1656 - 1742)	Astronomer	Cambridge, p.151.
271	1750	(GC)	16	Caroline Lucretia Herschel (1750 - 1848) born at Hanover	Astronomer	Cambridge, p.232.
271	1750			Thomas Wright (1711 - 86) - "An Original Theory or New Hypothesis of the Universe" (Inspire Kant, Look 1755)	Cosmology	Cambridge, p.218; p.228; Discoveries, p.152.
270	1751	April (GC)	19	Abbe De La Caille (1713 - 62; also known as Lacaille) arrive at Cape Town. (Arc of the Meridian)	Astronomer / Expedition	Cambridge p.251; Astr SA, pp28 - 43.
269	1752	September (GC)	14	Gregorian Calendar (see 1582) Great Britain and American colonies implements the Calendar reforms (11 days omitted from Calendar / 3 - 13 September 1752)	Calendar	Calendar p.vi

Colour index 18th Century

Important non-scientific events

South Africa: Political

South Africa: Astronomy

Astronomy (excluding South Africa)

Science (excluding Astronomy)

Milestone Events

Celestial Event

18th Century / 2nd Half / 1753 - 1800 (Gregorian Calendar)							
DATE		EVENT			Topic	Source	Colour index 18th Century
YEARS AGO	YEAR	MONTH	DAY				
268	1753			Dolland designs the divided object-glass micrometer	Instrument	Cambridge, p.219.	
268	1753	March	8	Lacaille leave Cape Town. (Arc of the Meridian)	Astronomer	Astr SA, p.43; Warner - Astr, p.50.	South Africa: Political South Africa: Astronomy
266	1755			Inspired by Wrights book [Look 1750] Emmanuel Kant (1724 - 1804) through the power of reason figures out very accurately the shape of the Universe.	Cosmology	Discoveries, p.152.	Astronomy (excluding South Africa)
265	1756			Tobias Mayer(1723 - 62) observe Asteroid Ceres but does not recognize it as such. (mistook it as a star)	Observation	Cambridge, p.191.	Science (excluding Astronomy)
264	1757			De La Caille publish positions of nearly 400 of the brightest of the southern stars, so establishing the framework for Southern Hemisphere Astronomy.	Catalogue / Science	Cambridge p.251.	Milestone Events
264	1757			Michell argues that most double stars are binary	Cosmology	Cambridge Chronology	Celestial Event
263	1758			John Dollond (1706 - 61) patents Achromatic lens	Instrument	Cambridge, p.152.	
262	1759	January	21	Return of Halleys comet (look 1695) first noticed by Charles Messier.	Celestial Event	Cambridge, p.173.	
260	1761			Trial begins of John Harrison's (1693 - 1776) H4 Chronometer	Instrument / Expedition	Cambridge, p.181.	
260	1761			Mason and Dixon observe Transit of Venus from Cape Town	Astronomer / Expedition	Astr SA, p.43.	
259	1762			Lacaille dies	Astronomer	Cambridge p.251.	
258	1763			Lacaille observations of 10 000 stars published posthunously	Publication	Cambridge p.251.	
309	1712			James Watt (1736 - 1819) greatly improves on the steam engine developed by Newcomen [Look 1712]	Mechanical	Discoveries, p.158.	
254	1767			Nautical Almanac founded by Nevil Maskelyne (1732 - 1811)	Catalogue	Cambridge, p.180.	
252	1769			Transit of Venus	Celestial Event		
249	1772			Wales and Bayly, (Captain Cooks 2nd voyage) made observations in order to determine the distance to Antartica.	Astronomer / Expedition	Astr SA, p.43.	
				American Revolution: 1775 - 83	Political	Civilization v2 p.73.	
246	1775			Gregorian Calendar (see 1582) Potestant Germany fully accept and implement the Calender reforms (partial acceptance 1700)	Calendar	Calendar p.vi	
240	1781			Charles Messier's (1730 - 1817) final catalogue of nebulae	Catalogue	Cambridge, p.238.	
240	1781	March	13	Uranus discovered by William Herschel using 7-foot reflector	Observation / Astronomer / Telescope	Cambridge, p.187; Faber, p.44.	
238	1783			First hot-air balloon flight by the Montgolfier brothers	Flight	Space, p.43; Discoveries, p.162.	
238	1783			Goodricke (1764 86) [and Edward Pigott 1753 - 1825] suggest Algol is an eclipsing binary.	Observation	Cambridge, p.203.	
238	1783			William Herschel sweeps for nebulae 1783 - 1802	Observation	Cambridge, p.310.	
236	1785			Mechanical Loom invented by Edmund Cartwright (1743 - 1823). This invention coupled with the steam engine led to the Industrial Revolution, an event that radically changed the World and all those who live on it.	Mechanical	Discoveries, p.164.	
236	1785			William Herschel's cross-section of Galaxy	Observation	Cambridge, p.310.	

236	1785		William Herschel pioneer use of statistics in Astronomy	Science	Cambridge, p.240.
232	1789	April	Lalande (1732 - 1807) urges French Estates-General to adopt a uniform physical standard of measurement [Look 1840]	Standard Weights and Measures	Measure, p.447.
			French Revolution: Phase 1 - Storming Bastille etc. 1789 - 91	Political	Civilization v2 p.79.
232	1789		William Herschel's 40-foot reflector completed	Telescope	Cambridge, p.243.
231	1790		Madrid Observatory established in Spain	Observatory	Cambridge, p.246.
			French Revolution: Phase 2 - Reign of Terror. 1791 - 97	Political	Civilization v2 p.73.
229	1792		Calendar of Reason: France (1792 - 1806)	Calendar	Calendar Time Line
229	1792	June	J Delambre (1749 - 1822) and P Mechain (1744 - 1804) re-measure the Paris Arc of the Meridian in order to establish the decimal system. [Look 1840]	Expedition / Standard Weights and Measures	Measure, p.1.
229	1792	March	7 John Frederick William Herschel born at Slough (1792 - 1871)	Astronomer	Cambridge, p. 248.
226	1795	September	First British Annexation of the Cape: 1795 - 1803	History: South Africa	
225	1796		First Vaccination by Edward Jenner (1749 - 1823) [Look 1881]	Medical	Discoveries, p.170.
225	1796		Pierre-Simon de Laplace (1749 - 1827) - "Exposition du systeme du monde"	Cosmology	Cambridge, p.184; Discoveries, p.172.
223	1798		William Herschel examine light from bright stars through a prism	Observation	Cambridge, p.290.
223	1798	November	22 Cannon firing time signal sets naval stores alight (Noon Day Gun)	Time Signal	Tavern of the Seas. Lawrence G. Green
222	1799		First Battery invented by Alessandro Volta (1745 - 1827)	Science	Discoveries, p.174.
222	1799		First Practical implementation of the Metric (Decimal) System in France. It was not a particularly popular idea.	Standard Weights and Measures / Metrology	McDowell, p.7
222	1799		Laplace - "Traite de mecanique celeste" Vol 1	Cosmology	Cambridge, p.184.
			Napoleon: 1799 - 1815.	Political	Civilization v2 p.92.
221	1800		"Monatliche Correspondenz" founded by Frans Xaver von Zach (1754 - 1832) [Monthly Journal]	Journal	Cambridge p.257.

19th Century / 1st half / 1801 - 1850						
YEARS AGO	DATE			EVENT	Topic	Source
	YEAR	MONTH	DAY			
220	1801	January	1	Ceres discovered by Guiseppe Piazzi (1746 - 1826)	Observation	Cambridge, p.190.
220	1801	March		Pallas discovered by H.W.M. Olbers (1758 - 1840)	Observation	Cambridge, p.190.
219	1802			William Hyde Wollaston (1766 - 1828) refines Newtons 1672 experiments on light	Experiment	Cambridge, p.262.
218	1803	February		Cape Colony becomes Dutch Territory Batavian Republic 1803 - 1806	History: South Africa	
218	1803			William Herschel confirms binary stars	Observation	Cambridge Chronology
217	1804			Train: High pressure steam engine invented and combined with the trolley. Invented by Richard Trevithick (1771 - 1833)	Mechanical	Discoveries, p.176.
215	1806	January		Cape Colony becomes British Territory 1806 - 1961	History: South Africa	
215	1806			Cannon fire time signal from Imhoff Battery (precursor Noon Day Gun) Imhoff Battery was extention of fortification east of Castle (Bisset says 1807)	Time Signal	Cape Town's Time-Guns. Cdr W.M. Bisset Militaria 14/4 1984 / Cannon, p42
214	1807			Vesta discovered	Observation	Cambridge, p.191.
214	1807			Juno discovered	Observation	Cambridge, p.191.
209	1812			Napoleon defeated in Russia	History: World Events	
209	1812			Olbers speculate that comets shapes were due to material ejected from the nucleus.	Observation	Cambridge, p.279.
207	1814			Netherlands cedes the Cape Colony to the British for a sum of £6 million	History: South Africa	
207	1814			Joseph Fraunhofer (1787 - 1826) maps lines in Solar spectrum 1814 - 15	Science	Cambridge p.262.
				Industrial Revolution: 1815 - 70	World Event	
206	1815			First Geological map produced by William Smith (1769 - 1839)	Geology	Discoveries, p.180.
205	1816			William Herschel knighted	Astronomer	Cambridge, p.231.
204	1817			Fraunhofer publish Solar spectrum	Publication	Cambridge p.262.
203	1818			Frierich Wilhelm Bessel (1784 - 1864) - "Fundamenta astronomiae"	Cosmology	Cambridge, pp.208 - 9)
201	1820			Astronomical Society of London Founded (Becomes Royal Astronomical Society 1831)	Society	Cambridge p.257.
201	1820	October	20	Order of Council to establish the Royal Observatory at the Cape of Good Hope. [Hereafter referred to Cape Observatory] First Observatory in the Southern Hemisphere [which also made it first permanent scientific establishment in Southern Hemisphere.] Obs to be managed by the Admiralty, Royal Navy	Observatory / Admin of Science	Warner - Astr, p.2.
201	1820			Sir George Everest visit the Cape. Suggestions on the Arc of the Meridean Project.	Expedition	Warner - Astr, p.50
201	1820			1820 Settlers arrive at Port Elizabeth	History: South Africa	
200	1821	May	5	Emperon Napoleon Bonaparte die at St Helena.	World Political	
200	1821	August	12	Fearon Fallows (1789 - 1831) arrives at Cape Town to establish the Cape Observatory - first 'Astronomer Royal at the Cape of Good Hope' (1821 - 1831)[sometimes referred to as H.M. Astronomer, hereafter referred to as "director"]	Observatory	Warner - Astr, p.6

Colour index 19th Century

Important non-scientific events
 South Africa: Political
 South Africa: Astronomy
 Astronomy (excluding South Africa)

Science (excluding Astronomy)

Milestone Events

Celestial Event

Administrative Structure of Science
 in South Africa

199	1822	August	25	Wilhelm Friedrich Herschel dies at Slough (1738 - 1822)	Astronomer	Cambridge, p.231.
198	1823			"Astronomische Nachrichten" founded by Heinrich Schumacher. He became the "Postmaster General of Astronomy", passing information on to everybody. It became easier to just publish.	Journal	Cambridge p.257.
197	1824			9 1/2 inch Dorpat refractor mounted. This instrument was the largest of its kind in the world, build by Fraunhofer and installed at Dorpat Observatory [now Tartu in Estonia]	Telescope	Cambridge, p.217.
196	1825	February	22	John Skirrow arrived as Clerk-of-Works to supervise construction of the Cape Observatory	Observatory	Warner - Astr, p.16.
195	1826			Herschel receives the Royal Society Gold Medal for double star Observations	Astronomer	
194	1827			Ohm's law: The interrelationship of voltage, resistance and current discovered by Georg Simon Ohm	Science	Discoveries, p.196.
194	1827			RAS starts "Monthly Notices"	Journal	Cambridge, p.259.
194	1827			Cape Observatory: 1st building completed.	Observatory	Warner - Astr, p.21
193	1828	October		Cape Observatory: 1st instruments installed: Dolland transit circle (1828 - 1855)	Observatory / Instrument	Warner - Astr, p.23
193	1828	October		Cape Observatory: 1st instruments installed: Jones mural circle (1828 - 1839)	Observatory / Instrument	Warner - Astr, p.23
193	1828	October	29	Cape Observatory: Official opening ceremony	Observatory	Warner - Astr, p.23.
192	1829			Timeball designed by Captain Robert Wauchope and tested at Portsmouth	Time Signal	Cambridge, p182. / Kinns, p.99
190	1831			John Herschel receives Knighthood of the Royal Hanoverian Guelphic Order	Astronomer	Astr SA, p.51.
190	1831			Astronomical Society of London (1820) receives Royal Charter and becomes Royal Astronomical Society (RAS)	Society	Cambridge, p.257.
190	1831	July	25	Fallow dies of scarlet fever. Buried in Observatory grounds	Astronomer	Warner - Astr, p.29.
189	1832	March	22	Thomas Henderson (1789 - 1844) Director of Cape Observatory (1832 - 1833)	Astronomer	Warner - Astr, p.32.
188	1833			Charles Lyell: "Principles of Geology" Book challenged the concept that the Earth is static (never changing)	Geology	Faber, pp.71 - 8.
188	1833			First operational Timeball enters service at Greenwich.	Time Signal	Cambridge, p.182; Warner - Astr, p.47.
188	1833			John Herschel - "Treatise on Astronomy"	Cosmology	Cambridge, p.198.
188	1833			Cape Observatory: Henderson starts a time service.	Time Signal	Warner - Astr, p.32.
188	1833	May		Henderson resigns as Director of Cape Observatory.	Astronomer	Warner - Astr, p.34.
				1834 - 1838 Great Trek	History: South Africa	
187	1834			Slavery Abolished in the British Empire	History: World Events	
187	1834			Henderson appointed Astronomer Royal of Scotland (1834 - 1844)	Astronomer	Warner - Astr, p.36.
187	1834	January	7	Maclear (1794 - 1879) arrive at Cape Town - Director (1834 - 70)	Astronomer	Warner - Astr, p.41; p.49.
187	1834	January	15	John Herchel arrive at Cape Town (Approx 10 days after Maclear) Set equipment up at Feldhausen (1834 - 38)	Observatory / Astronomer	Warner - Astr, p.41.
186	1835			C.P.Smyth (1819 -1900) 1st assistant director at Cape Observatory. (1835 - 1845)	Astronomer	Warner - Astr, p.49.
186	1835	September	1	14 ft Herschel telescope installed at Cape Observatory (used 1835 - 1850's). Maclear observe Halley's Comet	Telescope	

185	1836			Time Service: Time Ball with diameter 5 ft installed at Cape Observatory (1836 - 1853)	Observatory / Time Signal	Warner - Astr, p.47. / Kinns, p98
185	1836	June	15	Charles Darwin dine with John Herschel (Darwin later requested and was buried next to John Herschel in the church at Slough, England)	Astronomer	Astr SA, p.63.
184	1837			First Daguerrotype photo made by Louis Jacques Daguerre (1787 - 1851)	Photography	Discoveries, p.206.
184	1837			Wilhelm Struve (1793 - 1864) announces parallax of Vega (Struve's announcement was first, beating Bessel [61 Cygni] and Thomas Henderson[Alpha Centauri]).	Observation	Cambridge, p.219.
184	1837	December	9	Bradley Zenith Sector on loan to Cape Observatory to help with Arc Meridian Project (1837 - 50)	Telescope / Expedition	Warner - Astr, p.56 - 57.
184	1837			Maclear measures the baseline (Arc of the Meridian)	Expedition	Warner - Astr, pp.50 - 58; Astr SA, pp.57 - 60.
183	1838			Battle of Blood River	History: South Africa	
183	1838			Bessel announces parallax of 61 Cygni	Observation	Cambridge, p.215; p.219.
183	1838	March	11	John Herschel close down Feldhausen Observatory and leave the Cape.	Observatory	Warner - Astr, p.53.
183	1838			Maclear (1838 - 1847) re-measure Arc of Meridian	Expedition	Warner - Astr, pp. 50 - 53.
183	1838			John Herschel appointed Baronet	Astronomer	Cambridge, p.248.
182	1839			Pulkova Observatory founded; 15-inch refractor	Observatory / Telescope	Cambridge, p.272.
182	1839			First Calotype photo made by William Henry Fox Talbot (1800 - 77)	Photography	Discoveries, p.206.
182	1839	March	14	John Herschel give talk to Royal Society in which he uses terminology that became commonly used: Terms are "photography"; "hypo"; "positive"; negative"	Astronomer / Photography	Moore, p.51.
182	1839	July		Greenwich Mural Circle arrive to replace the problematic Jones Mural Circle (1839 - 1855) [Cape Observatory]	Instrument	Warner - Astr, p.56.
182	1839	October	22	William Mann (1817 - 73) arrive at Cape Town [Cape Observatory]	Astronomer	Astr SA, p.68; Warner - Astr, p.55.
181	1840	January	1	Decimal system. France the first country in the world to accept the Metric (Decimal) System.	Milestone / Standard Weights and Measures	Measure, p.345.
181	1840			Maclear acquire more land for the Cape Observatory	Observatory	Warner - Astr, p.59.
181	1840			A Cannon fired a time signal in Simon's Town. Initially at 20:00 but it was changed to 21:00 and became known as the 9 o'clock gun. circa 1840 until 1934	Time Signal	Cannon p44
180	1841			Cape Observatory: Magnetic and Meteorological Observatory created on the premises but administered by Royal Artillery. Equipment housed in "the Wind Tower". Not much attention was given at the time to these departments	Observatory / Services / Admin of Science / Magnetic / Weather	Warner - Astr, p.59 - 60.
179	1842			British Annexation of the Colony of Natal: Battle of Congella and ride of Dick King	History: South Africa	
179	1842			Wooden Bridge built over liesbeeck river that greatly improved access to the Cape Observatory	Observatory	Warner - Astr, p.59.
179	1842			Corona and prominences observed during solar eclipse	Observation	Cambridge Chronology
179	1842			Christian Doppler (1803 - 53) propose that the colour of starlight would be affected by the velocity of the star.	Science	Cambridge, p.293.

178	1843		Heinrich Schwabe (1789 - 1875) announces sunspot cycle.	Science	Cambridge, p.265.
177	1844		Charles Darwin "On the Origin of Species by Means of Natural Selection"	Biology	Discoveries, p.212.
177	1844		Bessel argues Sirius and Procyon has unseen companions. Look 1862	Observation	Cambridge, p.305.
177	1844		Temporary dome at Cape Observatory for Dollond 3-inch telescope	Observatory / Telescope	Warner - Astr, p.63.
177	1844	November 23	Henderson, previous director and now Astronomer Royal for Scotland dies.	Astronomer	Warner - Astr, p.36.
176	1845		Le Verrier (1811 - 77) predicts the existence of Neptune	Science	Cambridge, p.192.
176	1845	February	"Leviathan of Parkstone" reflector completed at Birr Castle (William Parsons, third Earl of Rosse 1800 - 67)	Telescope	Cambridge p.253.
176	1845	April	Drawing of M 51. Spiral structure of nebula recognised (Earl of Rosse)	Science	Cambridge p.255.
176	1845		First Daguerrotype photo of Sun taken by J.L.B. Foucault (1819 - 68) and A Fizeau (1819 - 96)	Astro-photography	Cambridge, p.271.
176	1845		Smyth appointed Astronomer Royal for Scotland and leave Cape Town.	Astronomer	Warner - Astr, p.36.
175	1846		Supposed resolution of Orion Nebulae	Observation	Cambridge, p.255.
175	1846	September 23	Neptune (and satellite) discovered at Berlin Observatory by J.D. Galle and H.L. d'Arrest.	Observation	Cambridge, p.195
174	1847		Harvard 15-inch refractor completed	Telescope	Cambridge, p.282.
			W. Struve's layered model of the Galaxy	Cosmology	Cambridge, p.311.
174	1847		John Herschels "Results of Astronomical Observations made During the Years 1834, 5, 6, 7, 8 at the Cape of Good Hope"	Publication	Cambridge p.252
174	1847		Mann appointed assistant director at Cape Observatory (1847 - 1872)	Astronomer	Warner - Astr, p.62.
174	1847		Permanent dome at Cape Observatory for Dollond 3-inch telescope	Observatory / Telescope	Warner - Astr, p.63.
			Marx and Engels publish "Communist Manifesto" 1848.	Political	
			1848: Year of the Revolutions	Political	
173	1848	January 9	Caroline Herschel dies at Hanover (1750 - 1848)	Astronomer	Cambridge, p.232.
172	1849		Benjamin Gould (1824 - 96) establish "Astronomical Journal" in U.S.A.	Journal	Cambridge p.259.
172	1849		Dome at Cape Observatory for Mertz 7-inch Telescope	Observatory / Telescope	Warner - Astr, p.63.

19th Century / 2nd half / 1851 - 1900

DATE				EVENT	Topic	Source	Colour index 19th Century
YEARS AGO	YEAR	MONTH	DAY				
171	1850	May	1	Bradley Zenith Sector returned to England	Instrument	Warner - Astr, p.56 - 57.	Important non-scientific events South Africa: Political South Africa: Astronomy
169	1852			Sir Edward Sabine (1788 - 1883) announces sunspots linked with magnetic storms	Science	Cambridge, p.265.	
169	1852	October	9	Mann visit U.K. (1852 Oct - 1853 Dec) to learn to use the Airy Transit Circle.	Astronomer	Warner - Astr, p.65.	Science (excluding Astronomy)
168	1853			The original time ball of 5ft (1835) could not be seen due to the growth of trees. A bigger time ball was installed on the ROCGH terrain. Time Ball service extended to Signal Hill and Simon's Town (disks at end of an arm were dropped)	Observatory / Time Signal	Warner - Astr, p.64. / Kinns pp98-99	Milestone Events
166	1855	January	27	Airy Transit Circle installed. Replaced both Dollond Transit Circle and Greenwich Mural Circle.(Cape Observatory)	Observatory / Instrument	Warner - Astr, p.66.	Celestial Event
165	1856			Norman Pogson (1829 - 91) define and publish magnitude scale of stars.	Science	Cambridge, p.297.	Administrative Structure of Science in South Africa
165	1856			First silver on glass astronomical mirrors. Method developed by Justus von Liebig (1803 - 73) in 1853.	Instrument	Cambridge, p.275.	
165	1856			Eight War of Dispossession - amaXhosa and Nongqwase	History: South Africa		
164	1857			James Clerk Maxwell (1831 - 79) shows Saturns rings made of particles.	Observation	Cambridge, p.282.	
163	1858	June		Donati's Comet. Extremely bright comet	Celestial Event	Cambridge, p.277.	
163	1858			Warren De La Rue (1815 - 89) photographs sunspots by collodion process.	Astro-photography	Cambridge, p.271.	
162	1859			The Refrigerator invented by Ferdinand Carre (1824 - 94)	Mechanical	Discoveries, p.218.	
162	1859			Wilhelm Tempel finds nebulosity around Merope in Pleiades	Observation	Cambridge, p.319.	
162	1859			Le Verrier notice the anomalous advance of the perihelion of Mercury.The solution lay in Einstein's General theory published in 1915.	Observation	Cambridge, p.339.	
162	1859			Robert Bunsen (1811- 99) and Gustav Kirchhoff (1824 - 87) associate elements with spectral lines in laboratory [spectral analysis]	Experiment	Cambridge, pp.263 - 64; Discoveries, p.220.	
162	1859	September	1	Solar Superstorm: Aurora's over equator - telegraph lines malfunctioning	Celestial Event	SciAm Aug 08, pp.60 - 67	
162	1859			"Bonner Durchmusterung" (1859 - 63) F.W.A. Argelander (1799 - 1875) publish position of stars as determined by Bonn astronomers.	Journal	Cambridge, p.259.	
162	1859			Cape Foot introduced as an official standard of measurement	Standard Weights and Measures / Metrology	McDowell, p.12	
162	1859			First Railway line between Cape Town and Wellington	Milestone Event / Technology	Wiki	
162	1859	December	2	First Telegraph in South Africa: Private line between office of Thomson, Watson & Co, to the residence of Mr. Pickering at Roodebloem. The message was "Ship coming in with deals – do you want any?".	Milestone Event / Technology	telecoms	
161	1860			Maclear receives the Knighthood for his work on the Arc Meridian	Astronomer	Astr SA, p.66.	
161	1860			Cape of Good Hope Meteorological Commission (one of first in the world)	Weather / Admin of Science		

161	1860	April	First public telegraph in South Africa. Private Company. Cape of Good Hope Telegraph Company Single-wire between Cape Town and Simonstown.	Technology	telecoms
			American Civil War: 1861 - 65	Political	
160	1861	September	ROCGH sent time signal via telegraph line to a time ball in Table Bay (not the current one in Waterfront but on the Observatory terrain) at 13:00. This was the first event of "remote control" in South Africa. 3 time ball locations: Observatory / Simon's Town / PE -/- Telegraph lines accompanied Railway lines. To synchronise time Telegraphists used "Observatory Time" (ROCGH). Principal Towns had two clocks, one showing Local Time and the other Railway time.	Time Signal / Milestone Event	Cape Almanac 1853-1875; Reports of HM Astronomer at the Cape of Good Hope 1879-1902; Sir David Gill, A History and Description of the Royal Observatory, Cape of Good Hope, 1913
160	1861		Kirchhoff's map of solar spectrum with elements identified. 1861 - 62	Science	Cambridge, pp.263 - 64.
159	1862		A. J. Angstrom (1814 - 74) shows hydrogen present in solar atmosphere	Observation	Cambridge, p.264.
159	1862		Alvan Clark observes companion of Sirius. Look 1844	Observation	Cambridge, p.305.
158	1863		"Astronomische Gesellschaft" founded	Journal	Cambridge p.259.
157	1864		James Clerk Maxwell (1831 - 79): "Theory of Electromagnetism".	Science	Infinity, pp. 22 - 23.
157	1864		Donati examines light of comet with spectroscope	Science	Cambridge, p.279.
157	1864	August 29	William Huggins (1824 - 1910) shows a nebula to be formed of gas	Science	Cambridge, p.293.
156	1865		Time Service: Time Ball installed at Port Elizabeth and operated electronically from Cape Observatory (+/- 750 Km)	Time Signal	Warner - Astr; p.64.
155	1866		Giovanni Schiaparelli (1835 - 1910) links August meteors with comet.	Observation	Cambridge, p.281.
154	1867		Alfred Nobel (1833 - 96) invents Dynamite	Science	Discoveries, p.230.
154	1867		Maclear receives Lalande Medal from the French Academie of Science for re-measuring the Arc of the Meridian	Astronomer	Astr SA, p.66.
153	1868		Angelo Secchi (1818 - 78) describes four types of stellar spectra.	Science	Cambridge, p.290.
153	1868		Norman Lockyer coin term "Chromosphere" for a layer of the Sun.	Terminology	Cambridge, p.268.
153	1868		Edwin Stone (1831 - 97) elected to Royal Society	Astronomer	Warner - Astr, p.74.
152	1869		Norman Lockyer knighted for his work on Spectroscopy.	Astronomer	Cambridge, p.268.
152	1869		Dimitri Ivanovich Mendeleev (1834 - 1907) "Periodic Table"	Science	Infinity, p.21; Discoveries, p.232.
152	1869		The last speculum metal mirror telescope to be made was installed at the Melbourne Observatory. It was a Grubb of Dublin 48-inch telescope .	Telescope	Cambridge, p.276.
152	1869		Stone receives Gold medal from Royal Astronomical Society	Astronomer	Warner - Astr, p.74.
152	1869		Maclear receives Royal Society Gold Medal for the re-measuring the Arc of the Meridian	Astronomer	Astr SA, p.66.
152	1869	May 18	Gill takes photo of Moon (Astrophotography)	Astro-photography	Astr SA, p.73; Warner - Astr, p.82.
152	1869		First Transcontinental Railway line opens in USA	History: World Events	
151	1870		C.A. Young (1834 - 1908) observes reversing layer during solar eclipse	Observation	Cambridge, p.269.
151	1870		Maclear (age 76) and Mann retire	Astronomer	Astr SA, p.67.
151	1870	October 13	Edwin Stone (1831 - 97) Director of Cape Observatory (1870-1879)	Astronomer	Warner - Astr, p.74.

150	1871	May	11	John Herschel dies at Kent (1792 - 1871)	Astronomer	Cambridge, p.248; Astr SA, p.66.
150	1871			Discovery of Diamonds at Kimberley	History: South Africa	Wiki
150	1871			Stone work on methodology to measure speed of sound	Science	Warner - Astr, p.76.
149	1872			Cape Colony becomes self Governing	History: South Africa	
149	1872			Bacteria discovered by Ferdinand Julius Cohn (1828 - 98)	Biology	Discoveries, p.234.
149	1872			Henry Draper (1837 - 82) photographs spectrum of Vega	Science / Astro-photography	Cambridge, p.288.
149	1872	February		Aurora visible from Cape Town	Celestial Event	
148	1873			Gregorian Calendar (see 1582) Japan implements the Calender reforms	Calendar	Calendar p.vi
148	1873			Nevill (1849 - 1940) Elected as Fellow of the Royal Astronomical Society	Astronomer	
148	1873	April	30	Mann dies	Astronomer	Astr SA, p.70; Warner - Astr, p.75.
148	1873	June	21	W.H. Finley (1849 -): Chief assistant at Cape Observatory (1873 - 1897)	Astronomer	Warner - Astr, p.75.
148	1873			Waterfront Time Ball: (There are other records saying this time ball was installed in 1883)	Time Signal	Kinns p99.
147	1874	April	16	Total Solar Eclipse in Namaqualand . Stone observed it and with his Browning Spectroscope which was the first ever scientific spectroscopic observations in Southern Africa.	Celestial Event / Science	Warner - Astr, p.75 - 76.
147	1874	April		During the eclipse expedition Stone took magnetic equipment along and produced the first set of magnetic observations of Namaqualand.	Celestial Event / Science	Warner - Astr, p.76.
147	1874			7-inch Mercz telescope receive a new mounting	Instrument	Warner - Astr, p.76.
147	1874	December	9	Transit of Venus (not visible in South Africa)	Celestial Event	Astr SA, p.134.
147	1874			John Goodricke (1764 - 86) discovers that Delta Cephei is a variable star. (Cepheid Variable stars - Look Leavitt 1908)	Observation	Cambridge, p.314.
146	1875	May	20	Metre Convention . An international movement to standardise weights and measures. Create organisation named Bureau International de Poids et Mesures (BIPM)	Standard Weights and Measures / Metrology	McDowell, p.3
145	1876			Four-stroke internal combustion engine developed by Nikolaus August Otto (1832 - 91)	Mechanical	Discoveries, p.238.
145	1876			Dry gelatine plates used in photography	Astro-photography	Cambridge Chronology
145	1876			Nevill publish the first book on the Moon in English: "The Moon, and the Conditions and Configuration of its Surface"	Astronomer	Astr SA, p.133.
145	1876	February	12	Observations initiated at Cape Observatory to monitor sunspots by taking two photo's per day with a Dallmeyer photoheliograph. Interest waned after a while	Observation / Asro-photograpy	Warner - Astr, p.77.
145	1876			Battle of Little Bighorn takes place in America	History: World Events	
144	1877			Deimos and Phobos, the two moons of Mars discovered by Asaph Hall (1829 - 1907)	Observation	Cambridge, p.282.
143	1878			First Telephones installed in Cape Town	Technology	telecoms
143	1878	December		Stone appointed Radcliffe Observer at Oxford.	Astronomer	Warner - Astr, pp.77 - 78.

142	1879	May		Stone complete the Catalogue of Southern Hemisphere Stars. "Catalogue of 12,441 stars for the epoch 1880; from observations made at the Royal Observatory, Cape of Good Hope, during the years 1871 to 1879."	Catalogue	Warner - Astr, p.79.
142	1879	May	27	Stone sail for England to take up post of Radcliffe Observer	Astronomer	Warner - Astr, p.79.
142	1879	June		David Gill (1843 - 1914) Director of Cape Observatory (1879 -1907)	Astronomer	
142	1879	July	14	Maclear dies. (Buried in Cape Observatory. Grounds)	Astronomer	Warner - Astr, p.71.
142	1879			First Submarine Cable between Europe and Durban via Indian Ocean	Technology	telecoms
142	1879	January	22	Battle of Isandlwana and Rorke's Drift	History: South Africa	
141	1880			Stone publish the Catalogue of Southern Hemisphere Stars. Receives Lalande Medal	Catalogue	Warner - Astr, p.79.
141	1880			Dun Echt Heliometer installed at Cape Observatory	Telescope	Warner - Astr, p.88.
141	1880			Henry Draper (1837 - 82) takes first photograph of Orion Nebula	Astro-photography	Cambridge, p.271.
141	1880			First Anglo Boer War 1880-1 (Transvaal War of Independence) Battle of Majuba	History: South Africa	
140	1881			Luis Pasteur develop his "germ theory of disease" and takes vaccination a step further. [Look 1796]	Biology	Discoveries, p.242.
140	1881			"Astronomische Gesellschaft" help to publish "Astronomische Nachrichten"	Journal	Cambridge, p.259.
139	1882			Stone was appointed as Astronomer in Charge to co-ordinate the British Transit of Venus Observations. (I am not sure of the exact date of appointment but it should be between 1879 and 1881; CL)	Astronomer	
139	1882	May	1	First Telephone exchange opened in SA opened in Port Elizabeth	Technology	telecoms
139	1882	September	8	Finlay discover the " Great comet of 1882 ". (C/1882R1)	Celestial Event	Warner - Astr, p.88.
139	1882			Gill takes photo of Comet (Astrophotography)	Astro-photography	Warner - Astr, pp.88 - 89; Astr SA, pp.75 - 76
139	1882	December	1	Natal Observatory (1882 - 1911) established; Director Nevill [Neison] (1849 - 1940)	Observatory / Astronomer	Astr SA, p.135.
139	1882			8 inch Grubb & 3 inch T&S Transit telescope installed Natal Observatory	Telescope	Astr SA, p.135.
139	1882	December	6	Transit of Venus	Celestial Event	
138	1883			Waterfront Time Ball: 17 foot time ball tower erected at docks	Time Signal	Monthly Notices of the Royal Astronomical Society v 43 1883 / Government Gazette 27 August 1982
136	1885			Nova S Andromedae encourages opposition to "island universes"	Cosmology	Cambridge Chronology
136	1885			Railway line completed between Cape Town and Kimberley	Technology	Wiki
135	1886			Gold Discovered at Johannesburg	History: South Africa	Wiki
134	1887			Radio invented by Guglielmo Marconi (1874 - 1937)	Radio	Discoveries, p.256.
134	1887			E.C. Pickering initiates study of spectroscopic binaries	Observation	Cambridge, p.299.
134	1887	April		Carte Du Ciel (CDC) inaugurated. In 1885 the director of the Paris Observatory, Admiral E.B. Mouchez (1821 - 92) conceived the idea of a photograpic star chart. A meeting was held in April 1887 attended by 56 astronomers from 19 nations. Due to problems the results were only published in 1964.	Catalogue / Astro-photography	Cambridge p.260.
134	1887			7 inch Repsold Heliometer installed at Cape Observatory	Telescope	Warner - Astr, p.90.

132	1889		First Submarine Cable between Europe and Cape Town via Atlantic ocean	Technology	telecoms
132	1889		The precursor to what became Boyden Observatory was started in Arequipa, Peru. Conditions proved to be less than perfect.	Observatory	
132	1889		Astrographic Refractor installed at Cape Observatory	Telescope	Warner - Astr, pp.92 - 93.
131	1890		Draper Catalogue Published. First to list the spectral type and magnitudes of stars (10 000 stars listed)	Catalogue	Cambridg, p.298.
131	1890		Lockyer - "Meteoritic Hypothesis"	Cosmology	Cambridge, p.308.
131	1890		Stone publish the Radcliffe Catalogue	Catalogue	Warner - Astr, p.79.
129	1892		"Astrophysical Journal" founded by George Ellery Hale (1868 - 1938)	Journal	Cambridge, p.260.
129	1892		Railway completed between Kimberley (existing line from Cape Town) to Johannesburg	Technology	Wiki
127	1894		AW Roberts (1857 - 1938) Elected as Fellow of the Royal Astronomical Society	Astronomer	
126	1895		First Motor Car to arrive in Cape Town	History: South Africa	
126	1895		Geological Commission of the Cape of Good Hope	Geology / Admin of Science	
126	1895	November 8	Wilhelm Rontgen: Discover X-Ray's	Physics	Infinity, pp.24 - 25; Discoveries, p.260.
126	1895		36-inch Crossley reflector installed at Lick Observatory. This telescope first demonstrated the suitability for silver-on-glass reflectors for taking photographs of nebula.	Telescope	Cambridge, p.276.
125	1896	March 1	Henri Bequerel: Discover "Uranium Rays", now known as "radioactivity.	Physics	Infinity, pp.26 - 27.
125	1896		R.T.A. Innes arrive Cape Town	Astronomer	Astr SA, p.95.
124	1897		Psychoanalysis and psychotherapy: Sigmund Freud (1856 - 1939)	Psychology	Discoveries, p.262.
124	1897		Yerkes 40-inch refractor completed	Telescope	Cambridge Chronology
124	1897	May 9	Stone dies at Oxford England.	Astronomer	Warner - Astr, p.79.
123	1898		Marie (1867 - 1934) and Pierre (1859 - 1906) Curie begin their famous studies that led to an understanding of radioactivity.	Physics	Discoveries, p.264.
123	1898		AW Roberts Elected as Fellow of the Royal Society of England	Astronomer	
123	1898		Astronomische Gesellschaft' help to publish "Astronomische Jahrsberg" which abstracted every publication concerning Astronomy. Look 1969	Journal	Cambridge p.259.
123	1898	October 25	S.S. Hough (1879 - 1923) Chief assistant at Cape Observatory (1898 - 1907)	Astronomer	Warner - Astr, p.109.
			1899 - 1902 Anglo Boer War	History: South Africa	
122	1899		David Gill reduced and publish "Catalogue of 1905 stars for the equinox 1865.0 from observations made at the Royal Observatory, Cape of Good Hope, during the years 1861 to 1870, under the direction of Sir Thomas Maclear".	Catalogue	
122	1899		Gill Publish "Catalogue of 2798 Zodiacal stars for the epoch 1900, arranged for differential observations of the planets"	Catalogue	

				Gill publish "A Catalogue of 8560 Astrographic Standard Stars between Declination -40deg and -52deg for the Equinox 1900 from observations made at the Royal Observatory, Cape of Good Hope, during the years 1896-99, under the direction of Sir David Gill. With Appendices."		
122	1899				Catalogue	
121	1900	May	24	Gill knighted	Astronomer	Warner - Astr, p.106.

20th Century / 1st half / 1901 - 1950							
YEARS AGO	DATE			EVENT	Topic	Source	Colour index 20th Century
	YEAR	MONTH	DAY				
120	1901			Victoria Telescope (Cape Observatory)	Telescope	Astr SA, p.79.	Important non-scientific events South Africa: Political South Africa: Astronomy
120	1901	May		Reversible Transit Circle that was designed by Gill installed at Cape Observatory	Telescope	Warner - Astr, p.101. Cambridge, p.301; Infinity, pp.30-31.	Astronomy (excluding South Africa)
120	1901			Max Planck (1858 - 1947) postulates the Quantum theory	Physics	Discoveries, p.274.	Science (excluding Astronomy)
120	1901	August	14	First powered flight (controversial) made by Gustav Weiskopf (1874 - 1927) at Bridgeport, Connecticut, USA	Flight	Discoveries, p.274. http://yourarchives.nationalarchives.gov.uk/index.php?title=The_History_of_Fortifications_in_South_Africa_1914-1947	Milestone Events
119	1902	August	4	Cannon fired for the first time from Lions Head Battery at Noon (Noon Day Gun as we know it)	Time Signal	Discoveries, p.274; Faber, p.236.	Celestial Event
119	1902	December	14	First powered flight (controversial) made by Wilbur Wright (1867 - 1912), assisted by his brother Orville (1871 - 1948)	Flight	Discoveries, p.274; Faber, p.236.	Administrative Structure of Science in South Africa
118	1903	March	1	South African Standard Time (SAST) A common time standard is adopted by the Governments of the Cape Colony, Natal, Transvaal, Orange River Colony, Rhodesia as well as the Government of Portuguese East Africa. ... such time to be that of Meridian of 30 degrees of East Longitude (two hours fast of Greenwich Time / 13th Meridian)	Time Signal / Metrology	Cape to Good Hope Government Gazette 1903	
118	1903			South African Journal of Science	Journal		
118	1903	April	1	Transvaal Meteorological Department (TMD) (1903 - 1909) start operations. Innes move from Cape Town to Johannesburg	Observatory / Weather	Astr SA, p.92.	
118	1903			R.T.A. Innes (1861 - 1933) Director of TMD Meteorological Department (1903 - 1923)	Astronomer	Astr SA, p.92.	
117	1904			International Union for Co-operation in Solar Research founded. With Carte du Ciel (1887) this was one of the first ever International co-operations and helped to pave the way for the founding of the IAU in 1919.	Society	Cambridge, p.261.	
116	1905			Hertzsprung (1873 - 1967) - of Hertzsprung-Russell diagram - suspects existence of a class of 'giant' stars	Cosmology	Cambridge, p.308.	
116	1905	January	17	Official opening of Transvaal Meteorological Department (TMD). Opened by Lord Milner. Innes 1st director	Observatory / Weather	Astr SA, p.92.	
116	1905			David Gill (ROCGH) suggest that the Transvaal Meteorological Department (TMD) should take responsibility for SAST since it is located close to 13th Meridian.	Observatory / Time Signal / Admin of Science		
116	1905			Gill's Reversible Transit Circle at Cape Observatory becomes operational after a long delay.	Telescope	Warner - Astr, p.101.	
116	1905			Albert Einstein (1879 - 1955) publish "Special Theory of Relativity"	Physics	Cambridge, p.339.	
115	1906			J.C. Kapteyn's (1851 - 1922) Plan of Selected Areas. This was a call for international co-operation to collect data on Galaxy structure.	Cosmology	Cambridge, p.312.	

115	1906	October	3	Gill leave S.A. for London due to ill health	Astronomer	Warner - Astr, p.106.
115	1906			H.E. Wood starts work at Transvaal Meteorological Department	Astronomer	Astr SA, p.102.
114	1907			Gill elected President of the British Association	Astronomer	Warner - Astr, p.107.
114	1907	October	3	Reunert Telescope (Tvl Meteorologic) known as 9-inch until 1924. First observation on 3 Oct	Telescope	Astr SA, p.96.
114	1907			S.S. Hough (1879 - 1923): Director of Cape Observatory (1907 - 1923)	Astronomer	Warner - Astr, p.109.
114	1907	June	30	J.K.E. Halm: Chief assistant at Cape Observatory (1907 - 1927)	Astronomer	Warner - Astr, p.112.
113	1908			Mt Wilson 60-inch reflector completed (largest telescope in the world 1908 - 1917)	Telescope	Cambridge, p.276.
113	1908			Henrietta Leavitt (1868 - 1921) publish the 'period-luminosity' relationship for Cepheid Variable stars.	Science	Cambridge, p.314.
113	1908			Tvl Meteorological Obs in association with RCGH accepts responsibility of Time Keeping in South Africa	Observatory / Time Signal / Admin of Science	McDowell, p.10
113	1908			Hough became 1st President of the Royal Society of S. Africa (Was previously known as the South African Institution)	Astronomer	Warner - Astr, p.113.
113	1908			Gill receives second Gold Medal from the Royal Astronomical Society.	Astronomer	Warner - Astr, p.107.
112	1909			Gill elected President of the Royal Astronomical Society (1909 - 10)	Astronomer	Warner - Astr, p.107.
112	1909			Name change: Transvaal Meteorological Department to Transvaal Observatory (1909 - 1912)	Observatory	
112	1909			Mr Worsell of the Tvl Observatory was the first time keeper in SA. 1909 - 38 / Public Works Department (PWD) then supplied them with a used Dent pendulum clock (same company that made Big Ben). Establish time through astronomical observation	Observatory / Time Signal	McDowell, p.125 / Vermeulen p.82
112	1909			Franklin Adams Telescope (Gift to Tvl Observatory)	Telescope	Astr SA, p.97.
				1910 Union of South Africa	History: South Africa	
111	1910	June	8	First time radio communication in South Africa when the Natal Administration established a coastal radiotelegraph station to communicate with ships. It used a Marconi 3kW spark-gap transmitter, which had a range of about 400km	Technology	telecoms
111	1910			Installation 4 inch heliostat at Cape Observatory for Solar Photography (1910 - ?)	Telescope	
111	1910			Halley's Comet	Celestial Event	
110	1911			Ernest Rutherford (1871 - 1937) proposes a model of the atom.	Physics	Cambridge, p.301; Discoveries, p.290.
110	1911			Closure of Natal Observatory due to lack of funds	Observatory	Astr SA, p.135
109	1912			Founding of the African National Congress (ANC) in Bloemfontein	History: South Africa	
109	1912			Cape Astronomical Association; 1st Astronomical Soc in SA	Society	
109	1912			Franklin Adams "Twin Telescope" (Gift to Tvl Observatory)	Telescope	Astr SA, p.98.
109	1912	April	1	Name change: Transvaal Observatory to Union Observatory (1912 - 1961)	Observatory	Astr SA, p.98.
109	1912			Union Obs extend time service by dropping time ball at Durban Bluff at 12h00.	Observatory / Time Signal	McDowell, p.125 / Vermeulen p.82
109	1912			Geological Survey of South Africa	Geology / Admin of Science	

109	1912			Continental Drift Theory proposed by Alfred Wegener.		
108	1913			Niels Bohr (1885 - 1962) proposed model of the atom	Physics	Cambridge, p.301.
108	1913			Norton Russel (1877 - 1957) [Hertzsprung-Russel diagram] presents for field stars (stars not in clusters) He correlated absolute magnitude with spectral type.	Science	Cambridge, p.299.
				World War One: 1914 - 1917	Political	
107	1914			Founding of the National Party (NP) in Bloemfontein	History: South Africa	
107	1914			Union Obs acquired 3 Riefler clocks.	Observatory / Time Signal	Vermeulen p.82
107	1914	January	24	Gill dies	Astronomer	Warner - Astr, p.107.
107	1914			Slipher announces large radial velocities of spiral nebula	Cosmology	Cambridge, p.326.
107	1914			Harlow Shapley's (1885 - 1972) theory of pulsating stars	Cosmology	Cambridge, p.306.
107	1914			W.S. Adams and Arnold Kohlschutter establish method of spectroscopic parallaxes	Science	Cambridge, p.300.
106	1915			Continental Drift Theory proposed by Alfred Wegener. "The Origin of Continents and Oceans"	Geology	Discoveries, p.292.
106	1915			Einstein publish "General Theory of Relativity"	Physics	Discoveries, p.298.
106	1915	July		Innes discover Proxima Centauri. Took second photograph in July. Publish it in circular of " Union Observatory Circular" in ?	Observation	Astr SA, p.94.; Conversation Ian Glass
106	1915			Einstein explain Mercury's strange perihelion, using his "General Theory of Relativity".	Physics	Cambridge.p.196.
105	1916			Van Maanen claims evidence of rotation in M 101	Observation	Cambridge, p.327.
				Russian Revolution: 1917	Political	
104	1917			Gregorian Calendar (see 1582) Russia implements the Calendar reforms (and do so again in 1940)	Calendar	Calendar p.vi
104	1917			Mt Wilson 100-inch reflector completed	Telescope	Cambridge, p.276.
103	1918			Shapley proposes 'Big Gallery'	Cosmology	Cambridge, p.312 - 7.
103	1918			Publication begins of Henry Draper catalogue of stellar spectra	Catalogue	Cambridge, p.298 -9.
103	1918			Johannesburg Astronomical Association founded	Society	
				Great Influenza Epidemic: 1918 - 1919	World Event	
102	1919			A.S. Eddington (1882 - 1944) confirms Einsteins theory of relativity (bending of light) during solar eclipse	Observation / Milestone	Infinity, p.107.
102	1919			International Astronomical Union founded Due to the repercussions of World War one the defeated nations were not initially included. Germany only became a member in 1952.	Society	Cambridge p.261.
101	1920			'Great Debate' between Harlow Shapley (1885 - 1972) and Heber D. Curtis (1872 - 1942)	Cosmology	Cambridge, p.329.
101	1920			Meghnad Saha (1894 - 1956) publishes theory of ionization in stellar atmospheres	Physics	Cambridge, pp.301 - 2.
100	1921	May	15	Solar Storm: Electrical Grids malfunctioned	Celestial Event	SciAm Aug 08, p.66
99	1922			South Africa joins the IAU	Society	C:\Files\Astronomy\Historical_SA\Archive\Societies\Cape Astr Association\Correspondence\036b
99	1922			Cape and Johannesburg Societies amalgamate to form the "Astronomical Society of South Africa" (A.S.S.A.)	Society	

99	1922	First Automatic Telephone exchange and teletype telegraph system in SA	Technology	telecoms
99	1922	Department of Assizes (Weights and Measures Act 32 (1922)) - South Africa accepts the Metric System as a legal system alongside the British System	Standard Weights and Measures / Metrology	McDowell, p.12
98	1923	Edwin P. Hubble (1889 - 1953) finds Cepheid variable in Andromeda Galaxy	Observation	Cambridge, p.329.
98	1923	Union Obs adopts VLF time signals from Rugby (England) and stops astronomical Obs.	Observatory / Time Signal	McDowell, p.126
98	1923	July 8 Hough dies	Astronomer	Warner - Astr, p.113.
98	1923	December 3 Harold Spencer Jones (1890 - 1960): Director of Cape Observatory (1923 - 1933)	Astronomer	Warner - Astr, p.114.
97	1924	9-inch telescope at Union Observatory became known as Reunert	Telescope	Astr SA, p.96.
97	1924	A.S. Eddington (1882 - 1944) discover the Mass-Luminosity relation	Physics	Cambridge, p.303.
96	1925	Hubble demonstrates Andromeda Nebula is independent galaxy	Cosmology	Cambridge, p.333.
96	1925	Cecilia Payne (later Payne-Gaposchkin 1900 - 79) publish "Stellar Atmosphere's"	Cosmology	Cambridge, p.302.
96	1925	Bruckaros Observatory opened (1925 - 1931)	Observatory	Astr SA, p.142.
96	1925	Yale Observatory opened (1925 - 1951)	Observatory	Astr SA, p.112.
96	1925	H.L. Alden: Director of Yale Observatory (1925 - 1945)	Astronomer	Astr SA, p.112.
96	1925	26 inch telescope installed at Yale Observatory	Telescope	Astr SA, p.111.
96	1925	W.H. van den Bos (1896 - 1974) start work at Union Observatory	Astronomer	Astr SA, p.101.
96	1925	26.5 inch telescope installed at Union Observatory	Telescope	Astr SA, p.102.
95	1926	March 26 First Liquid-fuel rocket launched by R.H. Goddard	Science	Space, p.67.
94	1927	A.S. Eddington (1882 - 1944) - "The Internal Constitution of the Stars". Postulate the source of stellar energy.	Physics	Cambridge, p.304.
94	1927	Werner Heisenberg (1901 -): "Heisenberg Uncertainty Principle"	Physics	Infinity, p.37.
94	1927	"Big Bang" theory postulated by Georges Lemaitre (1894 -1966)	Cosmology	Infinity, p.98.
94	1927	Jan Oort (1900 - 92) analyses stellar motions to study structure of Galaxy	Cosmology	Cambridge, p.317.
94	1927	Union Obs sends hourly time signal send to South African Broadcasting Corporation (SABC) (10 sec dash)	Observatory / Time Signal	McDowell, p.126
94	1927	H.E. Wood starts work at Transvaal Meteorological Department	Astronomer	Astr SA, p.102.
94	1927	H. Horrocks: Chief assistant at Cape Observatory (1927 - 1935)	Astronomer	Warner - Astr, p.116.
94	1927	Boyden move from Arequipa (Peru) to Bloemfontein	Observatory	Astr SA, p.122.
94	1927	J.S. Paraskevopoulos (1889 - 1974): Director of Boyden Observatory (1927 - 1951)	Astronomer	Astr SA, p.122.
94	1927	1.5 m Rockefeller Telescope moved from Arequipa (Peru) to Boyden. Was largest telescope in South Africa 1927 - 1951.	Telescope	Astr SA, p.122.
94	1927	30 cm (12inch) telescope moved from Arequipa (Peru) to Boyden.	Telescope	Astr SA, p.122.
93	1928	R.A. Rossiter (1896 - 1977): Director of Lamont-Hussey Observatory (1928 - 1952)	Astronomer	Astr SA, p.130.
93	1928	27 inch Refractor installed at Lamont-Hussey Observatory	Telescope	Astr SA, p.130.
		Stock Market Crash: 1929	World Event	
92	1929	Hubble shows galaxies receding in conformity with 'law of redshift'	Science	Cambridge, p.341 - 3.

91	1930			Robert J. Trumpler (1886 - 1956) demonstrates existence of interstellar dust in plane of Galaxy	Observation	Cambridge, p.322.
91	1930	February	18	Discovery of Pluto by Clyde William Tombaugh (1906 -)	Observation / Planet	Cambridge, p.285.
91	1930			First circular particle accelerator or cyclotron invented by Ernest Lawrence.	Physics	Infinity, p.50.
91	1930			Spencer Jones elected Fellow of the Royal Society.	Astronomer	Warner - Astr, p.116.
90	1931			S. Chandrasekhar investigates structure of white dwarf stars	Cosmology	Cambridge, p.305.
90	1931			Bruckaros Observatory close	Observatory	Astr SA, p.142.
90	1931			Minor planet Eros on closest approach to earth. Spencer Jones direct international project	Celestial Event / Astronomer	Warner - Astr, p.116.
89	1932			James Chadwick identify a new fundamental particle of the atomic structure, the neutron	Physics	Cambridge, p.305.
89	1932			Radio: Karl Jansky (1905 - 50) constructs antenna, detects radio waves from Milky Way	Radio	Cambridge, p.352.
88	1933	March	13	Innes dies.	Astronomer	
88	1933			Spencer Jones return to England. Appointed Astronomer Royal for England. (1933 - 1954)	Astronomer	Warner - Astr, p.116.
88	1933	March	27	John Jackson (1887 - 1958): Director of Cape Observatory (1933 - 1950)	Astronomer	Warner - Astr, p.117.
87	1934			Walter Baade (1893 - 1974) and Fritz Zwicky (1893 - 1960) publish theory of neutron stars; shows that nova falls into two classes. They postulate "pulsars" which were discovered in 1967.	Cosmology	Cambridge, p.306, p.307.
87	1934			Union Obs - Time signal to SABC changed to 6 pips using the Dent Clock	Observatory / Time Signal	McDowell, p.126 / Vermeulen p.84
86	1935	October	25	R.H. Stoy (1910 - 94): Chief assistant at Cape Observatory (1935 - 1950)	Astronomer	Warner - Astr, p.117.
86	1935			Nevill receives Gold Medal from the Royal Chemical Society	Astronomer	Astr SA, p.136.
84	1937			Grote Reber (1911 -) constructs 9-metre dish steerable in elevation	Radio	Cambridge, p.352.
84	1937			Radcliffe Observatory opens (1937 - 1974)	Observatory	Astr SA, p.115.
84	1937	May	14	D.S. Evans (1916 - 2004) Elected as Fellow of the Royal Astronomical Society	Astronomer	
83	1938			Nuclear fission: Experiment by Otto Hahn (1879 - 1968) and Friedrich Strassman (1902 - 80)	Physics	Discoveries, p.324.
83	1938			National Research Council (forerunner to CSIR)	Admin of Science	McDowell, p.14
83	1938			Alexander Menzies (1905 - 88) Elected as Fellow of the Royal Astronomical Society	Astronomer	
83	1938			Hertzprung 1st astronomer sent by Leiden to Union Observatory	Astronomer	
83	1938			Union Observatory gets new buildings	Observatory	
83	1938			Worsell retire from Union Obs. Duties of time keeper now rotate amongst Astronomers.	Observatory / Time Signal	McDowell, p.126 / Vermeulen p.84
83	1938			16 inch twin Rockefeller Telescope (Union)	Telescope	Astr SA, p.107.
				World War Two: 1939 - 1941	Political	
82	1939			H.A. Bethe's (1906 -) detailed theory of nuclear source of stellar energy	Physics	Cambridge, p.304.
82	1939			Outbreak of World War Two leads to intensive development of radar	Radio	Cambridge Chronology

82	1939	H. Knox-Shaw (1885 - 1979): Director Radcliffe Observatory (1939 - 1951)	Astronomer	Astr SA, p.115.
81	1940	Nevill dies at Eastbourne (England)	Astronomer	Astr SA, p.136.
81	1940	Gregorian Calendar (see 1582) Russia implements the Calendar reforms for second time (see 1917)	Calendar	Calendar p.vi
80	1941	Hermanus Magnetic Observatory founded	Observatory	
80	1941	van den Bos (1896 - 1974): Director of Union Observatory (1941 - 1956)	Astronomer	Astr SA, p.103.
79	1942	Detection of radio waves from the Sun	Radio	Cambridge, p.352.
79	1942	December 2 Selfsustaining nuclear chain reaction (nuclear powerplant) achieved by Enrico Fermi (1901 - 54)	Physics	Discoveries, p.328.
79	1942	Time Signal. Union Obs switch to WWV Washington radio signal. (1945 it changed to Colorado)	Observatory / Time Signal	wiki / McDowell, p.126
78	1943	Spencer Jones receives Knighthood from the British Empire	Astronomer	Warner - Astr, p.116.
78	1943	Spencer Jones receives a Medal from the Royal Astronomical Society.	Astronomer	Warner - Astr, p.116.
78	1943	Spencer Jones receives a Medal from the Royal Society.	Astronomer	Warner - Astr, p.116.
77	1944	Baade announces discovery of Stellar populations	Observation	Cambridge, p.335.
76	1945	Council for Scientific and Industrial Research (CSIR) established by Scientific Research Council Act (no 33 of 1945) of Parliament of the Union of South Africa	Admin of Science	https://www.csir.co.za/our-history
76	1945	South African Bureau of Standards (SABS) / standalone department, not part of CSIR - mission would be commercial standards. CSIR would be scientific standards	Admin of Science	McDowell, p.15
76	1945	July 16 First nuclear device detonated in New Mexico (USA)	Milestone / Physics	Discoveries, p.334.
76	1945	August	Political	Discoveries, p.334.
76	1945	August	Political	Discoveries, p.334.
76	1945	End of World War Two releases radar equipment and personnel for scientific work	Radio	Cambridge Chronology
75	1946	National Physical Laboratory (NPL) - not in competition to SABS, mission would be fundamental research and standards	Standard Weights and Measures / Metrology / Admin of Science	McDowell, p.15/6
75	1946	Space: V2 rockets make ultraviolet observations of the Sun	Space	Cambridge, .359.
75	1946	November 1	Time Keeper	Vermeulen p.84
75	1946	David Evans: Second Assistant at Radcliffe Observatory (1946 - 1951)	Astronomer	Astr SA, p.115.
75	1946	Adriaan Wesselink (1909 - 95): Superintendant Leiden Observatory (1946 - 1950)	Astronomer	
74	1947	Cyril Jackson (1903 - 88): Director of Yale Observatory (1947 - 1951)	Astronomer	Astr SA, p.113.
74	1947	Alan Cousins (1903 - 2001) joins Cape Observatory	Astronomer	
73	1948	Union Obs acquired quartz clock. Q1	Observatory / Time Signal	McDowell, p.127
73	1948	Steady State Theory proposed by Fred Hoyle (1915 -) Herman Bondi (1919 -) and Thomas Gold (1920 -)	Cosmology	Cambridge, p.356.
73	1948	48-inch (1.25 m) Schmidt telescope completed. Palomar Mountain. (USA)	Telescope	Cambridge
73	1948	200-inch telescope completed. Palomar Mountain. (USA)	Telescope	Cambridge, p.337.

73	1948	V2 rockets detect solar X-rays	Space	Cambridge, p.361.
73	1948	Aerobee rockets introduced	Space	Cambridge
73	1948	Union Obs starts to transmit time signal - ZUO	Observatory / Time Signal	McDowell, p.127 / Vermeulen p.84
72	1949	Gregorian Calendar (see 1582) China implements the Calendar reforms. This was the last country to switch to the Gregorian Calendar and so for the first time the whole World use the same calendar	Calendar	Calendar p.vi
72	1949	October 1 First identification of radio sources with optical objects	Radio	Cambridge, p.354.
71	1950	Union Obs acquired quartz clock. Q2	Observatory / Time Signal	McDowell, p.127
71	1950	R.H. Stoy (1910 - 94): Director of Cape Observatory (1950 - 1968)	Astronomer	Warner - Astr, p.121.
71	1950	Walraven Superintendent of Leiden Observatory (1950 - 76)	Astronomer	Astr SA, p.107.

20th Century / 2nd half / 1951 - 2000

DATE				EVENT	Topic	Source	Colour index 20th Century
YEARS AGO	YEAR	MONTH	DAY				
70	1951			Detection of 21 centimetre line	Radio	Cambridge, p.355.	
70	1951	March	13	D.S. Evans: Chief assistant at Cape Observatory (1951 - 1968)	Astronomer	Warner - Astr, p.120.	
70	1951			A.D. Thackeray : Director Radcliffe Observatory (1951 - 1974)	Astronomer	Astr SA, p.118.	
70	1951			Closure of Yale Observatory	Observatory	Astr SA, p.113.	
70	1951			Boyden Observatory: No official Director (1951 - 1968)	Observatory	Astr SA, p.112.	
70	1951			74 inch 2 m Telescope installed at Radcliffe (1951 - 1974). Largest telescope in South Africa 1951 - 2003	Telescope	Astr SA, p.115.	
69	1952			First proton synchrotron at Brookhaven National Laboratory. (USA)	Physics	Infinity, p.56.	
69	1952			Bubble chamber for detecting particles invented by Donald Glaser	Physics	Infinity, p.55.	
69	1952			Baade announces revision of distance scale	Science	Cambridge, pp.334 -8.	
69	1952			Germany joins IAU only in 1952. Look 1919	Society	Cambridge, p.261.	
68	1953	February	28	DNA decoded by Francis Crick (1916 -) and James Watson (1928 -)	Biology	Discoveries, p.340.	
67	1954			Leiden Observatory at Hartebeeshoek (1954 - 1978)	Observatory	Astr SA, p.107.	
67	1954			Franklin Adams Telescope moved from Union to Hartebeeshoek	Telescope / Observatory	Astr SA, p.107.	
67	1954			CERN: Construction work starts on the particle accelerator at Geneva, Switzerland	Physics	Infinity, p.56.	
66	1955			45 cm Cox-Hargreaves telescope installed at Cape Observatory	Telescope	Warner - Astr, p.121.	
65	1956			SABS incorporated with CSIR until 1962, then SABS operate independently again.	Admin of Science	McDowell, p.15	
65	1956			A.S.S.A. name change from Astronomical Society of South Africa to Southern Africa.	Society		
65	1956			Richard Wooley van der Riet appointed Astronomer Royale for England (1956 - 1971)	Astronomer	Astr SA, p.86.	
65	1956			Stoy 1st Honorary Prof. Astronomy at Univ of Cape Town	Astronomer	Warner - Astr, p.122.	
65	1956			26 inch telescope moved from Yale to Mt Stromlo, Australia	Telescope		
64	1957			Laser (Light amplification by stimulated emission of radiation) achieved by G Gould (1920 -) A Schawlow (1921 - 99) and C Townes (1915 -)	Physics	Discoveries, p.348	
64	1957	October	4	Sputnik 1 launched (USSR)	Space	Cambridge, p.361; Space, p.93.	
64	1957			Jodrell Bank (UK) 250-foot fully steerable dish	Radio	Cambridge, p.354.	
64	1957			Founding of "Association of Universities" for Research in Astronomy. (U.S.A.)	Society	Cambridge, p.346.	
64	1957			National Physical Research Laboratory (NPRL) - name changed from National Physical Laboratory (NPL) - Division of CSIR	Admin of Science	McDowell, p.50	
64	1957			W.S. Finsen: Director of Union Observatory (1957 - 1965)	Astronomer	Astr SA, p.104.	
64	1957			16 inch Rockefeller Twin Telescope moved from Union to Hartebeeshoek	Telescope	Astr SA, p.107.	
64	1957			36 inch Flux Collector telescope installed at Hartebeeshoek	Telescope	Astr SA, p.108.	
64	1957	November	3	Sputnik 2 launched (USSR) Carried a dog named Laika.	Space	Space, p.96.	
63	1958	February	1	Explorer 1: first American satellite launched	Space	Space, p.103.	

Colour index 20th Century

Important non-scientific events
 South Africa: Political
 South Africa: Astronomy
 Astronomy (excluding South Africa)
 Science (excluding Astronomy)
 Milestone Events
 Celestial Event
 Administrative Structure of Science in South Africa

63	1958			G.F. Knipe (1916 - 73): joins Union Observatory (1958 - 73)	Astronomer	Astr SA, p.105.
62	1959	February	17	Vanguard 2: the first weather satellite launched (USA)	Space	Space, p113.
62	1959	October	4	Luna 3 take first images of the back of Moon (USSR)	Space	Space, p.149; Cambridge, p.360.
62	1959			120-inch telescope, Mt Hamilton (USA)	Telescope	Cambridge Chronology
62	1959			Olifantsfontein Satellite Tracking Station (1959 - 1976)	Observatory	Astr SA, p.143.
62	1959			Southern Star Reference Catalogue (SRS) 1959 - ?	Catalogue	
61	1960			The Admiralty (Royal Navy) hand ROCGH over to the UK Science Research Council (SRC) who decided to close down ROCGH. South African Council for Scientific and Industrial Research (CSIR) forged an agreement with the Science Research Council UK (SRC) to form a new organization to pursue astronomy in South Africa, financed for a limited time two-thirds from South Africa and a third from the UK. [Look 1 Apr 1965]	Observatory / Admin of Science	Glass ROCGH, p.62
61	1960	April	1	As a result of recommendations by His Majesty's Astronomer and the Astronomer Royal, the Cape Observatory was taken under the wing of the Royal Greenwich Observatory (RGO), becoming to a large extent a southern extension of the RGO.	Observatory / Admin of Science	Warner - Astr p.122
61	1960			Hartebeesthoek becomes one of NASA's 14 Satellite Tracking and Data Acquisition Network (STADAN) stations established around the globe	Observatory / Space / Admin of Science	
61	1960	November	3	Spencer Jones dies in England	Astronomer	Warner - Astr, p.116.
61	1960	November	13	Solar Storm: Electrical Grids malfunctioned	Celestial Event	SciAm Aug 08, p.60
61	1960	December	31	Union Obs - ZUO time signal co-ordinate with US Naval Observatory due to satellites.	Observatory / Time Signal	
				1961: Political Independence. South Africa change from the Union to the Republic of South Africa	History: South Africa	
				1961: Political Independence.Start of International pressure on South Africa due to Apartheid	History: South Africa	
61	1960			First Satellite connection in SA between Bloemfontein and Klerksdorp	Technology	telecoms
60	1961	April	12	First man in space. Yuri Gagarin flew in Vostok 1. (USSR) 1 orbit.	Space	Space, p.137.
60	1961	May	5	Mercury 3: Alan Shepard the first American in Space. (Suborbital)	Space	Space, p.137.
60	1961	July	21	Mercury 4: Gus Grissom in space. (USA) Suborbital	Space	Space, p.137.
60	1961	August	6	Vostok 2: Does 17 orbits. (USSR)	Space	Space, p.137.
60	1961			American satellite Transit 3A crashes and killed a cow in Cuba. Cow gets State funeral, as a victim of Imperialist aggression.	Space / Cold War	Space, p.136.
60	1961			Parkes (Australia) 64-metre steerable dish	Radio	Cambridge, p.362.
60	1961			Name Change: Union Observatory to Republic Observatory (1961 - 1971)	Observatory	Astr SA, p.104.
60	1961			Attempt fail to reform Calendar (known as World - Universal Calendar) Each year would start on a Sunday	Calendar	Calendar p.329
60	1961			Arecibo (Puerto Rico) 305-metre dish in natural hollow.	Radio	Cambridge, p.363.
60	1961			First Quasars identified	Observation	Cambridge, p.362 - 4
59	1962			Aerobee rocket detects X-ray star (USA)	Space	Cambridge, p.361.
59	1962			SABS gains independence from CSIR after it was incorporated in 1956	Admin of Science	McDowell, p.15

59	1962		Act 32 of 1962 made provision for the CSIR to be responsible for the measurement standards	Standard Weights and Measures / Metrology / Admin of Science	
59	1962		Frank Holden (1917 - 92): Director of Lamont-Hussey Observatory (1962 - 1973)	Astronomer	Astr SA, p.130.
58	1963		Yale Observatory re-opened in El Leoncita, Argentina	Observatory	
58	1963	June	Vostok 6: First woman in space - Valentina Tereshkova (USSR)	Space	Space, p.140.
58	1963		Elizabeth telescope installed at Cape Observatory	Telescope	Astr SA, p.83.
57	1964		Ranger 7 gives images of the Moon's surface (USA)	Space	Cambridge, p.360.
57	1964		Cambridge (UK) one-mile telescope	Radio	Cambridge Chronology
57	1964		Carte du Ciel (CDC) Catalogue published. Look 1887.	Catalogue	Cambridge p.260.
57	1964		Quarks discovered at CERN by George Zweig and Murray Gell-Mann (1929 -)	Physics	Discoveries, p.352.
57	1964		Detection of microwave background radiation by Arno Penzias (1933 -) and Robert Wilson (1936 -)	Observation / Physics / Milestone	Cambridge, p.358; Infinity, p.100.
57	1964		South Africa becomes member of BIPM (Bureau International de Poids et Mesures)	Standard Weights and Measures / Metrology / Admin of Science	McDowell, p.25
57	1964		CSIR create division at NPRL named Precise Physical Measurements (PPM) Division [except for time, acoustics and ionising radiation] (ppm also stands for parts per million)	Standard Weights and Measures / Metrology / Admin of Science	McDowell, p.26
57	1964		CSIR assume responsibility for Astronomy in South Africa. All the mayor Observatories except for Boyden came under control of CSIR.	Astronomy / Admin of Science	McDowell, p.10 / p.130
2021			CSIR assumes responsibility for Time Services. Keep operating from the premises of the Union Obs. (Check date)	Observatory / Time Signal / Admin of Science	
57	1964		Republic Observatory transferred to CSIR from Dept. Arts, Science and Technology	Observatory / Admin of Science	Astr SA, p.104. / Vermeulen p.89
57	1964		MRM telescope installed at Cape Observatory	Telescope	Astr SA, p.87.
56	1965	April	1 the Science Research Council (previously the Department for Scientific and Industrial Research) in Britain took over responsibility from the Admiralty for running the three Royal Observatories (Greenwich, Edinburgh and the Cape) [Look 1960]	Observatory / Admin of Science	Warner - Astr, p.122.
56	1965		Jodrell Bank / Malvern (UK) VLBI 127-km baseline	Radio	Cambridge Chronology
56	1965	March	18 First space walk by Alexei Leonov aboard Voskhod 2. (USSR)	Space	Space, p.140.
56	1965	November	6 Explorer 29 better known as GEOS-A launched. (USA) First geodetic satellite used for investigating the shape of the Earth.	Space	Space, p.116.
56	1965		D.S. Evans 1965 – 66: National Science Foundation Senior Visiting Scientist Fellow at the University of Texas at Austin	Astronomer	Astr SA, p.84.
56	1965		John Lake and Danie Smuts joins Hers as time keeper	Time Keeper	McDowell, p.131
55	1966		World as well as SA adopts Caesium standard. Portable clock loaned by USA to SA.	Time Signal	McDowell, p.129
54	1967	January	27 Apollo 1: Disaster, crew burned to death whilst training. (USA) Killed: Virgil Grissom; Edward White and Roger Chaffee.	Space	Space, pp.142 - 4.
54	1967	April	23 Soyuz 1: Disaster, parachutes failed. (USSR) Killed: Vladimir Komarov	Space	Space, p.144.
54	1967		Canadian VLBI 3074-km baseline	Radio	Cambridge Chronology

53	1968			Orbiting Astronomical Observatory OAO-2 launched (USA)	Space	Cambridge, p.361.
53	1968			Announcement of discovery of first pulsar	Observation	Cambridge, p.361.
53	1968			Human Sciences Research Council (HSRC)	Admin of Science	
53	1968			D.S. Evans receives U.K. Civil Service rank of SPSO (Senior Principle Scientific officer)	Astronomer	MVol64, Nos1&2, p8
53	1968			D.S. Evans resign at Cape Observatory to become Professor in Astronomy at the University of Texas, as well as the Associate Director of Macdonald Observatory	Astronomer	MVol64, Nos1&2, p8
53	1968			Jarret Director of Boyden Observatory (1968 - 1989)	Astronomer	Astr SA, p.123.
53	1968			20 inch Telescope installed at Republic Observatory	Telescope	Astr SA, p.105.
52	1969	July		Apollo 11: First humans on Moon (USA) Neil Armstrong and Michael Collins lands on Moon. Edwin Aldrin stay behind in orbiter.	Milestone / Space	Cambridge p.259; Space, p.186 - 192.
52	1969			"Astronomy and Astrophysics Abstracts" founded. This was an English publication of "Astronomische Jahrsberig" (founded 1898) which was a publication of "Astronomische Gesellschaft" (founded 1863)	Journal	Cambridge p.259.
52	1969			G.A. Harding: Officer in Charge of Cape Observatory (1969 - 1973)	Astronomer	Warner - Astr, p.124.
52	1969			The Hermanus Magnetic Observatory is incorporated into the Council for Scientific and Industrial Research (CSIR) as an independent research unit.	Observatory / Admin of Science	
52	1969			Lowell Planetary Project (1969 - 1974)	Project	Astr SA, pp. 105 - 106
51	1970	April	11	Apollo 13: The big rescue.	Space	Space, pp.194 - 9.
51	1970	August	17	Venera 7 sends signal from Venus. (USSR)	Space	Cambridge, p.360.
51	1970			Small Astronomical Satellite SAS-1 launched (USA)	Space	Cambridge, p.361.
51	1970	September	23	CSIR announced the amalgamation of Cape, Radcliffe and Republic Observatories to form the Combined South African Observatories [CSAO] (later renamed South African Astronomical Observatory [SAAO])	Observatory / Admin of Science	Astr SA, p.87. / Warner - Astr pp.124-5
51	1970			Cousens retires	Astronomer	
50	1971			van der Riet Wooley: Director of S.A.A.O. (1971 - 1976)	Astronomer	Astr SA, p.86.
50	1971	December	31	Royal Observatoy at the Cape of Good Hope formally cease to exist	Observatory / Admin of Science	Astr SA, p.125.
49	1972	January	1	S.A.A.O. officially founded (CSAO renamed South African Astronomical Observatory)	Observatory / Admin of Science	Astr SA, p.86.
49	1972			Obligation for maintenance of the time standards was transferred to the CSIR's National Physical Research Laboratory (NPRL) Move from premises of Rep Obs to NPRL	Legislation / Admin of Science / Observatory / Time Keeping	McDowell, p.10 / p.31
49	1972			European Space Research Organization ultraviolet satellite TD-1 launched	Space	Cambridge Chronology
49	1972			Orbiting Astronomical Observatory OAO-3 ('Copernicus') launched (USA)	Space	Cambridge Chronology
49	1972			Small Astronomical Satellite SAS-2 launched (USA)	Space	Cambridge, p.361.
49	1972			Cambridge (UK) 5-km telescope	Radio	Cambridge Chronology
49	1972			Effelsberg (Federal Republic of Germany) 100-metre steerable dish	Radio	Cambridge Chronology
49	1972			Knipe dies	Astronomer	Astr SA, p.105.
49	1972			20 inch telescope moved from Republic to Sutherland Observatory	Telescope	Astr SA, p.85.

49	1972			Atomic Time replaces Earth Time as the world's official time standard	Calendar	Calendar p.vii
48	1973			Measuring Units and National Measuring Standards Act 76 of 1973	Legislation /Admin of Science	
48	1973			National Metrology Laboratory (NML) Metrology was moved from CSIR to become a standalone department of the Department of Trade and Industry	Standard Weights and Measures / Metrology / Admin of Science	McDowell, pp.15-6 / pp.29 - 30
48	1973			3.8-metre Telescope, Kitt Peak (USA)	Telescope	Cambridge Chronology
48	1973			1.24-metre UK Schmidt telescope, Siding Spring (Australia)	Telescope	Cambridge Chronology
48	1973			Official opening of Sutherland (S.A.A.O.)	Observatory	Astr SA, p.88.
48	1973			Skylab	Space	Discoveries, p.374.
47	1974			Astronomical Netherlands Satellite launched (Netherlands & US)	Space	Cambridge Chronology
47	1974			Mariner 10 photographs Mercury and Venus (USA)	Space	Cambridge Chronology
47	1974			Closure of Radcliffe / 74-inch moved to Sutherland Observatory	Observatory / Telescope	Astr SA, p.85.
47	1974			Feast: Director of S.A.A.O. (1974 - 1992)	Astronomer	
47	1974	March	30	van den Bos dies	Astronomer	Astr SA, p.104.
46	1975			Venera 9 photographs surface of Venus (USSR)	Space	Cambridge, p.360.
46	1975			Small Astronomical Satellite SAS-3 launched (USA)	Space	Cambridge, p.361.
46	1975			Gamma ray satellite Cos-B launched (ESA)	Space	Cambridge Chronology
46	1975			3.9-metre Anglo-Australian telescope, Siding Spring (Australia)	Telescope	Cambridge Chronology
46	1975			First Observations with Very Large Array, Socorro (USA)	Radio	Cambridge, p.357.
45	1976			4-metre US telescope, Cerro Tololo (Chile)	Telescope	Cambridge Chronology
45	1976			6-metre telescope, Mt Pastukhov (USSR)	Telescope	Cambridge Chronology
45	1976			Viking probes photograph surface of Mars (USA)	Space	Cambridge Chronology
45	1976			Closure of Olifantsfontein Satellite Tracking Station	Observatory	
45	1976			Hartebeesthoek - Satellite Remote Sensing Centre (SRSC)	Observatory	
44	1977			Voyagers 1 and 2 launched (USA)	Space	Cambridge Chronology
44	1977			3.6-metre European Southern Observatory telescope, La Silla (Chile)	Telescope	Cambridge Chronology
43	1978			International Ultraviolet Explorer (ESA, UK, USA) launched	Space	Cambridge, p.361.
43	1978			High Energy Astrophysical Observatory HEAO-2 ('Einstein Observatory') launched (USA)	Space	Cambridge Chronology
43	1978			3.8-metre UK Infrared telescope, Mauna Kea, Hawaii	Telescope	Cambridge Chronology
43	1978			Closure of Leiden (Hartebeesthoek)	Observatory	
43	1978			36 inch Flux Collector telescope moved from Hartebeesthoek to ESO site at La Silla (Chile)	Telescope	
42	1979			Voyager 1 and 2 visit Jupiter (USA)	Space	Cambridge Chronology
42	1979			3.6-metre Canada-France-Hawaii telescope, Mauna Kea, Hawaii	Telescope	Cambridge Chronology
42	1979			3-metre US NASA Infrared telescope facility, Mauna Kea, Hawaii	Telescope	Cambridge Chronology
42	1979			Multiple Mirror Telescope, Mt Hopkins (USA)	Telescope	Cambridge Chronology
42	1979			Alan Guth (1949 -) postulate "Inflation Theory"	Cosmology	Infinity, p.103.
41	1980			Expansion of Time signal transmitted via TV test pattern	Time Signal	McDowell, p.133
41	1980			French National Space Agency (CNES) tracking station at Hammanskraal outside Pretoria is relocated to Hartebeesthoek and integrated with the Satellite Remote Sensing Centre (SRSC).	Observatory / Space	
41	1980	April	1	National Calibration Services (NCS) became standalone service from CSIR	Standard Weights and Measures / Metrology / Admin of Science	McDowell, p.35 / p.142

41	1980		Voyager 1 visit Saturn (USA)	Space	Cambridge Chronology	
41	1980		Very Large Array fully operational	Radio	Cambridge Chronology	
40	1981		National Measuring Standards and Metrology Division (NMS&M) The Precise Physical Measurements (PPM) of CSIR was renamed NMS&M	Standard Weights and Measures / Metrology / Admin of Science	McDowell, p.37 / 50	
40	1981	April	12	First launch of the first space shuttle Columbia. (USA)	Space	Life, p236.
40	1981		Voyager 2 visit Saturn (USA)	Space	Cambridge Chronology	
38	1983		Infrared Astronomical Satellite(Netherlands, UK, USA) launched	Space	Cambridge, p.361.	
38	1983		X-ray satellite EXOSAT launched (ESA)	Space	Cambridge Chronology	
37	1984		3.5-metre telescope, Calar Alto (Spain)	Telescope	Cambridge Chronology	
37	1984		Introduction of Optical Fibre in South Africa	Technology	telecoms	
36	1985		20 cm Coelostat telescope installed at Boyden Observatory	Telescope		
35	1986		Voyager 2 visit Uranus (USA)	Space	Cambridge Chronology	
35	1986		Giotto and other spacecraft intercept Halley's Comet (ESA)	Space	Cambridge Chronology	
35	1986		MIR Spacestation 1986 - 1999 (USSR)	Space	Discoveries, p.374.	
35	1986		Disaster: Space Shuttle Challenger explodes 73 seconds after take of killing 7 astronauts.	Space	Discoveries, p.374.	
35	1986		James Clerk Maxwell telescope, 15-metre millimetre and submillimetre dish, Mauna Kea, Hawaii	Radio	Cambridge Chronology	
35	1986		Superconductivity: J Bednorz (1950 -) and K Muller (1927 -)	Physics	Discoveries, p.376.	
35	1986		Halley's Comet	Celestial Event		
34	1987	February	23	Supernova 1987A	Celestial Event	
34	1987		4.2-metre UK telescope, Canary Islands	Telescope	Cambridge Chronology	
34	1987		14 ft Herschel telescope mirror rediscovered at Cape Observatory	Telescope		
34	1987		CSIR mayor restructured	Admin of Science		
34	1987		Metrology now split between 1) Productiontek, Division of Production Technology (DPT) 2) Electro-magnetic Metrology (EMM) 3) Engineering Metrology (EM)	Standard Weights and Measures / Metrology / Admin of Science	McDowell, p.50	
33	1988		National Metrology Lab (NML) started using GPS signals	Time Signal / Metrology	McDowell, p.133	
32	1989		Hartebeeshoek - Satellite Remote Sensing Centre (SRSC) renamed the Satellite Applications Centre (SAC)	Observatory / Space / Admin of Science		
32	1989		Time Signal by CSIR - ZUO cease operation	Time Signal	McDowell, p.129	
32	1989		Cape Obs became a second center for time keeping. Ron Lake moved to Cape Town. / 1989 - ? (did not last long)	Observatory / Time Signal		
32	1989		Voyager 2 visit Neptune (USA)	Space	Cambridge Chronology	
32	1989		Galileo probe to Jupiter launched; 1989 - 99 (USA)	Space	Cambridge Chronology; Discoveries, p.390.	
32	1989		Hipparcos astrometric satellite launched (ESA)	Space	Cambridge Chronology	
32	1989		Cosmic Background Explorer [COBE] launched (USA)	Space	Infinity, p.134.	
32	1989		3.5-metre European Southern Observatory's New Technology Telescope, La Silla (Chile)	Telescope	Cambridge Chronology	
32	1989		Sweden-European Southern Observatory 15-metre submillimetre dish, Mauna Kea, Hawaii	Radio	Cambridge Chronology	
32	1989	July	14	Large Electron Positron collider (LEP) becomes operational at CERN.	Physics	Infinity, p.78.
32	1989	October	20	Solar Storm: Electrical Grids malfunctioned	Celestial Event	SciAm Aug 08, p.64

32	1989	Boyden Observatory: Period of inactivity (1989 - 1999)	Observatory	Astr SA, p.128.
31	1990 January	John Mather (1947 -) announces COBE satellite found black body radiation within 99.97% fit of Big Bang theory.	Cosmology	Infinity, p.134.
31	1990 April 24	Hubble Space Telescope Launched (USA)	Space	Cambridge Chronology; Infinity, p.120.
31	1990	Rontgestrahlen satellit (X-ray satellite) ROSAT (Germany, also UK and USA) launched	Space	Cambridge Chronology
31	1990	US Caltech submillimetre Observatory, 10.4-metre submillimetre dish, Mauna Kea, Hawaii	Radio	Cambridge Chronology
30	1991	Compton Gamma Ray Observatory Launched (USA)	Space	Cambridge Chronology; Infinity, p.124.
30	1991	10-metre Kech 1' (9.8-metre) US Next Generation telescope, Mauna Kea, Hawaii	Telescope	Cambridge Chronology
29	1992	Extreme Ultraviolet Explorer EUVE launched (USA)	Space	Cambridge Chronology
29	1992	Stobie: Director of S.A.A.O. (1992 - 2002)	Astronomer	
28	1993	Division of Manufacturing and Aeronautical Systems Technology (Aerrotek) Productiontek was combined with another CSIR Division to form Aerrotek and the previous two programmes were combined into a single Metrology Programme	Standard Weights and Measures / Metrology / Admin of Science	McDowell, p.50
28	1993	Council for Geoscience	Admin of Science	
28	1993	US Very Long Baseline Array VLBI, baseline up to 8 000km	Radio	Cambridge Chronology
28	1993	Asca -ray satellite launched (Japan)	Space	Cambridge Chronology
28	1993 December	Hubble Space Telescope optics repaired	Space	Cambridge Chronology; Infinity, p.120.
		1994: General Elections in South Africa. End of Apartheid era. (New International interest in South African Facilities)	Political: South Africa	
27	1994	National Metrology Laboratory (NML)	Standard Weights and Measures / Metrology / Admin of Science	
27	1994	National Calibration Services (NCS) becomes independent of CSIR and part of a new organisation South African National Accreditation System (SANAS)	Standard Weights and Measures / Metrology / Admin of Science	McDowell, p.44
26	1995	Galileo visits Jupiter (USA)	Space	Cambridge Chronology
26	1995	Helio and Heliosheric Observatory launched (ESA)	Space	Cambridge Chronology
26	1995	Infrared Space Observatory launched (ESA)	Space	Cambridge Chronology
25	1996	Academy of Science of Southern Africa (ASSAf) Department of Arts, Culture, Science and Technology [DACTS]	Admin of Science	
24	1997	National Council on Innovation (NACi) [DACTS]	Admin of Science	
23	1998	National Research Foundation (NRF) [DACTS]	Admin of Science	
22	1999	Boyden revived as research and educational institution	Observatory	
21	2000 June	1.5 m ATP telescope operational at Sutherland	Telescope	
21	2000 July 14	Solar Storm: Electrical Grids malfunctioned	Celestial Event	SciAm Aug 08, p.65
21	2000 September 1	SALT Groundbreaking Ceremony	Telescope	MNASSA Oct 2000 p.81
21	2000 November 15	S.A.A.O.- IRSF (Infrared Survey Facility) opened	Telescope	

THE YEAR 2000 IN DIFFERENT CALENDARS ARE:

6236 according to the first **Egyptian** Calendar
5760 according to the **Jewish** Calendar
5119 in the current **Maya** great cycle
2753 according to the old **Roman** Calendar
2749 according to the ancient **Babylonian** Calendar
2544 according to the **Buddist** Calendar
1997 according to **Christ's** actual birth circa 4 BC
1716 according to the **Coptic** Calendar
1420 according to the **Muslem** Calendar
1378 according to the **Persian** Calendar
208 according to the Calendar of the **French Revolution**
the year of the **Dragon** according to the **Chinese** Calendar

Calendar

21st Century / 1st half / 2001 - 2050

DATE				EVENT	Topic	Source	Colour index 21st Century
YEARS AGO	YEAR	MONTH	DAY				
20	2001	January		Human Genome Project: Results made public.	Biology	Discoveries, p.392.	Important non-scientific events South Africa: Political South Africa: Astronomy Astronomy (excluding South Africa)
20	2001			Bronberg Observatory operational	Observatory		
20	2001			Hermanus Magnetic Observatory incorporated into the National Research Foundation.	Observatory / Admin of Science		
19	2002			Department of Arts, Culture, Science and Technology (DACTS) get split into Arts and Culture (DAC) / Science and Technology (DST)	Admin of Science	https://esat.sun.ac.za/index.php/Department_of_Arts,_Culture,_Science_and_Technology	Science (excluding Astronomy)
19	2002	May	2	Robert (Bob) Steward Stobie died. He was director of S.A.A.O. and one of the driving forces behind SALT	Astronomer	Buckley, Africa's Giant Eye, p23	Milestone Events
18	2003			South African Council for Natural Scientific Professions (SACNASP) Department of Science and Technology (DST)	Admin of Science		Celestial Event Administrative Structure of Science in South Africa
18	2003	January	18	Bushfire destroys Mnt Stromlo in Australia/26 inch Yale destroyed	Observatory / Telescope		
16	2005	January	14	Huygens Probe lands on Titan, one of Saturn's moons. It was part of an expedition in which the ESA send the Cassini craft to Saturn	Space exploration		
16	2005	September	1	SALT First Light	Telescope	mnassa oct 2005 p.138	
16	2005	November		S.A.A.O. Official opening of S.A.L.T. Telescope	Observatory / Telescope		
15	2006			Measurement Units and Measurement Standards Act (Act 18 of 2006) made Metrology independent of CSIR.	Standard Weights and Measures / Metrology / Admin of Science	Metrology	
14	2007			National Metrology Institute of South Africa (NMISA) was established. It is a standalone Institute directly under Department of Science and Innovation	Standard Weights and Measures / Metrology / Admin of Science		
14	2007			Astronomy Geographic Advantage Act, declares the Northern Cape an "astronomy advantage area", giving the Minister of Science and Technology powers to protect the area from future radio interference.	Standard Weights and Measures / Metrology / Admin of Science		
12	2009	June		SALT: the Spherical Abberation Corrector (SAC) was replaced	Observatory / Telescope	mnassa june 2009 p.93	
11	2010			South African National Space Agency (SANSA) Department of Science and Technology (DST)	Admin of Science / Space		
10	2011			Hermanus Magnetic Observatory incorporated into South African National Space Agency (SANSA) and becomes Space Weather Centre.	Admin of Science / Space		
9	2012	May	25	Announcement that South Africa wins the bid to host the SKA	Observatory / Telescope		
8	2013	September	28	SALT telescope obtains first light after a mayor refit	Observatory / Telescope		
7	2014						
7	2014	November	12	First time that a manmade object landed on a comet. Rosetta spacecraft lander named Philae lands on comet 67P/Churyumov-Gerasimenko. Part of the ESA mission.	Milestone Event / Space exploration		
1	2020			Covid-19 Virus epidemic	World Event		

Abbreviations

ESA

European Space Agency

SKA

Square Kilometre Array

Listing	Sources:	Author:
1421	1421 - The Year China Discovered the World	Menzies; Gavin
Astr SA	The Astronomy of Southern Africa	Moore; Patrick & Collins; Pete.
Calendar	The Calendar	Duncan; David Ewing.
Cambridge	Cambridge Illustrated History: Astronomy	Hoskin; Michael. (ed)
Cannon	The Muzzle Loading Cannon of South Africa	De Vries, G. and Hall, J.
Civilization v?	Civilization Past and Present, Volume 1 and 2. Eighth Edition	Wallbank et. al.
Discoveries	Discoveries and Inventions: from Prehistoric to Modern Times	Meidenbauer; Jorg. (ed)
Faber	Faber Book of Science	Carey; John.
Infinity	The search for infinity - solving the mysteries of the Universe, Reed Consumer Book Limited, London, 1994.	
Kinns	Time Keeping in the Antipodes: A critical comparison of the Sydney and Lyttleton Time Balls; Journal of Astronomical History and Heritage, Vol 12, No, July 2009.	Kinns, R.
Life	LIFE in Space, Time Life Books, Amsterdam	
McDowell	"The National Metrology Laboratory of South Africa: the first 50 years (1947-1997)". CSIR: Pretoria, South Africa, 2013	McDowell, M.
Mapping Time	Mapping Time; The Calendar and its History	Richards, E.G.
Metrology	"Measurement and Measurement Standards Act - Act No. 18, 2006": Government Gazette, Republic of South Africa: Vol 501, Cape Town, 28 March 2007, No. 29752.	
Measure	The Measure of All Things	Alder; Ken
Mvol?No?	Monthly Notes of the Astronomical Society of Southern Africa (MNASSA)	
SciAm	Scientific American	
Space	Space	Moore; Patrick.
telecoms	https://mybroadband.co.za/news/telecoms/133136-how-south-africa-went-from-its-first-telegraph-service-in-1859-to-100mbps-fibre-in-2015.html	
Vermeulen	Living amongst the Stars in Johannesburg, Paarl Printing Ltd, 2006	Vermeulen J
Warner - Astr	Astronomers at he Royal Observatory - Cape of Good Hope	Warner; Brian.
Wiki	Wikipedia	