WELLINGTON ASTRONOMICAL SOCIETY

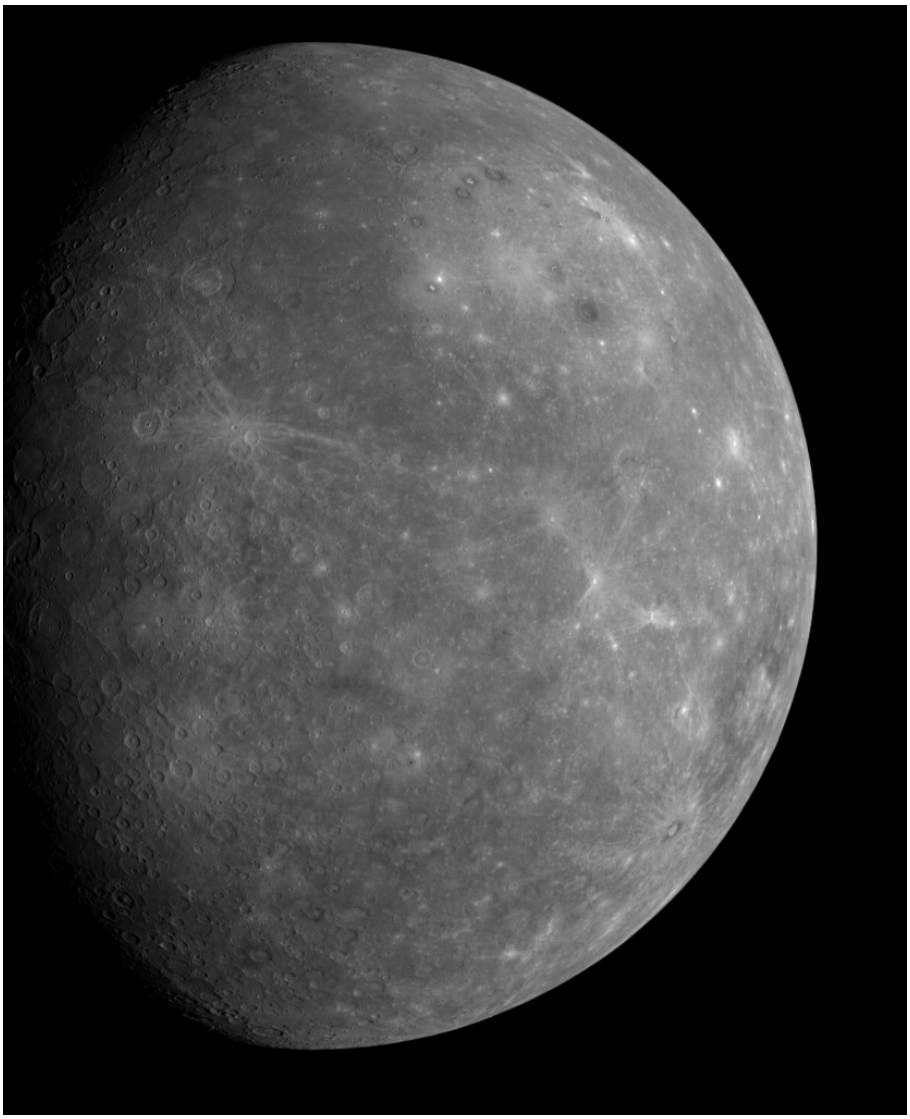

Photo © Johns Hopkins University Applied Physics Lab and NASA

MONTHLY MEETING: Unseen Mercury revealed
by David Maclennan
Wednesday 7th May 2008 7.30 PM
Science House,
Turnbull Street,
Thorndon

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'Unseen Mercury revealed' by David Maclennan, President New Zealand Spaceflight Association

On 14 January 2008, NASA's MESSENGER spacecraft made the first flyby of the planet Mercury in almost 33 years. Its predecessor, Mariner 10, made three flybys in 1974-75 but only viewed about half of the planet. Messenger's first flyby gave scientists their first look at the side of Mercury not seen by Mariner 10. Researchers have been amazed by the wealth of images and data returned by MESSENGER, which reveal a unique world with a diversity of geological processes and a very different magnetosphere from the one discovered and sampled more than 30 years ago. The spacecraft's cameras and other sophisticated, high technology instruments collected more than 1,200 images and made other science observations.

MESSENGER imaged huge cliffs that stretch for hundreds of kilometres across the planet, and a unique feature which scientists dubbed "The Spider." This formation has never been seen on Mercury before and nothing like it has been observed on the moon. It lies in the middle of a large impact crater called the Caloris basin and consists of more than 100 narrow, flat-floored troughs radiating from a complex central region. MESSENGER will make two more flybys, in October 2008 and September 2009, before entering orbit around Mercury in March 2011

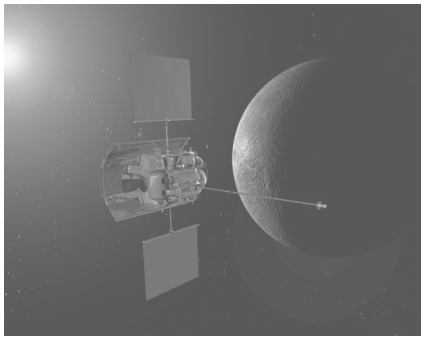


Photo © Johns Hopkins University Applied Physics Lab and NASA

Royal Astronomical Society of New Zealand. Special General Meeting in May: Changes to the WAS Constitution. Information supplied by John Field, President WAS

To continue to receive the tax-free status of the Society, our current constitution requires changes. These require the inclusion of how the Society benefits the community (**highlighted**). Clauses 5 & 6 have been altered to expressly include our commitment to community involvement, which we are actually already doing. Clause 23 has also been altered to bring the constitution in line with currents laws on the disposal of the Society's assets if the Society were to wind up. An addition to clause 18 is needed to prevent us changing the nature of the Society. These changes are shown below, and **highlighted** in bold typeface. If you wish to view the current constitution it can be downloaded from WAS website: www.was.org.nz

These changes need to be approved at a Special General Meeting after which the updated constitution will be submitted to the Registrar of Incorporated Societies and IRD for their acceptance. As all societies around New Zealand have been asked to make similar changes I hope these will be accepted at the upcoming meeting in May.

Altered clauses:

1. OBJECTS OF THE SOCIETY

(5) **To benefit the community** by encouraging astronomical research, skills and **knowledge by activities including displays at schools and public events**.
(6) **To benefit the community** by promoting and holding lectures, meetings and discussions either between members of, or with, other clubs, societies or associations of a similar nature and, if the Society should decide, to hold competitions or examinations and give prizes, awards, certificates or medals, and public events.

23. DISPOSAL OF ASSETS

In the event of the Society being put in liquidation the appointed liquidator shall hold the assets of the Society on trust. After payment of any costs incurred by the liquidator and payment by the liquidator of all debts and liabilities of the Society, any surplus funds and remaining assets of the Society shall be distributed to **an approved charitable trust,** organisation or organisations **in New Zealand** with similar objects to the Society. Preference shall be given to such organisation or organisations as may be determined by resolution of a General Meeting of members of the Society.

New clause:

18. ALTERATION OF THE CONSTITUTION

(4) No addition to or alteration or recession of the rules shall be approved if it affects the objects, personal benefit clause or the winding up clause. The provisions and effect of this clause shall not be removed from this document and shall be included and implied into any document replacing this document.
John Field, President , Wellington Astronomical Society
Lesley Hughes, Treasurer, Wellington Astronomical Society

From The Top by John Field

Remember that this month has a Special General Meeting to vote on the changes to the Constitution as requested by the Incorporated Societies and Inland Revenue Department; so come along and exercise your voting rights!

Next year is the International Year of Astronomy (IYA2009), marking the use of the telescope as an astronomical tool, during this period groups around the world will be promoting astronomy in a wide a range of forms. If you want to learn more about events that will be happening check out: http://www.astronomy2009.org.nz/. IYA 2009 will be a good opportunity for us to promote our Society and astronomy in the Wellington region. Some activities we are looking at are visiting schools doing Star Parties, public events and holding monthly meetings as usual. If you know of a school, or group, that may want to host a Star Party let us know so we can look at arranging a visit / event. Another highlight for the year is that we hope to host the RASNZ conference; both previous conferences have been great success and we expect this one to be better! We will know if we will be hosting this event after the upcoming RASNZ Conference at Lake Tekapo.

Bill and Lesley are planning to stand down from Council at the AGM after years of sterling effort and therefore we are looking for a couple of people to fill their shoes. Lesley has been Treasurer during this period and has played an important role in keeping the bills paid and Bill has been dealing with membership renewals. Both jobs are important roles, but Don't Panic, Bill and Lesley are happy to train you up. If you are interested in either roles please contact any Council Member.

Pauatahanui Observing sessions

Observing sessions at Pauatahanui will be held on the first Saturday of the month, weather permitting. Located on "Willow Bank Farm" off Murphy's Road, Judgeford; on the left hand side of the road, about 1km from the intersection of State Highway 58 and Murphy's Road. The observatory holds a 12-inch Meade SCT on an equatorial wedge. The site has a number of flat areas on which members can place their own scope to observe. There is a toilet located in the shearing shed and car parking is in front of the shed. As it is a working farm it pays to wear sturdy footwear and dress warmly, bring along a torch (hopefully with a red filter

to protect your dark adaptation). Children are welcome but remember it will be cold, dark and mushy under foot!

This month's session will commence at 8:00pm on Saturday, May 3rd. If the weather is looking doubtful please contact me on my mobile 021 -255 -1904 to see if the session is going ahead.

Gifford star Party Saturday May 10th

The Gifford star party will be held on Saturday May 10th. The contact person is Duncan Hall ph 474-5340. Please note that this number connects to his mobile phone.

Report on the April meeting by Vicki Irons

The April meeting was held on a cold night in the warmth and welcome of the Alliance Francaise. After the pate and wine we settled to a history of M51 and its influence on society, art and astronomy of the time. Professor Tobin, who has straddled the world in his teaching career, included titbits of intrigue that played a part in our understanding of spiral galaxies. The contribution of technical feats of folly (the Leviathan), followed by advances in clarity (mirror making), supported by theory were all woven together in this illustrated talk given in English but decorated with well enunciated French. Elements of the great Foucault's contributions and methods of research that don't always use the Internet were part of the story. A very satisfying evening.

Looking in Leo by John Field.

During Autumn Leo is in our northern sky and is a good target for easily found Double stars, galaxies and a planet! Leo is one of the 12 recognised zodiacal constellations through which the Sun, Moon and planets move through as viewed from our planet. The Greeks associated it with one of the 12 tasks of Hercules, the hero having to dispatch the lion back to his heavenly origin. For observers in the southern hemisphere Leo hangs upside down in the north with the prominent sickle shape of the lion's head marked with the star Regulus. Regulus is the 20th brightest star in the night sky and approximately 70 light years distant. Binoculars and telescope will reveal a wide 8th magnitude companion. The second brightest star in the sickle is called Algieba (Gamma Leonis) and is also a double. Binoculars reveal a 5th magnitude star close by, 40 Leonis, that is not physically related but a line of sight effect. Using a small telescope and 100 times magnification Algieba can be split into a pair of golden yellow stars. These two orange giants shine at magnitudes 2.3 and 3.5, their orbital period about 600 years around their common centre of mass. Two 9th magnitude galaxies can be found between theta and iota Leonis. Charted by Charles Messier and given the numbers M65 and M66. Both are spiral galaxies but M65 is tilted towards us and appears an elliptical shape. In small telescopes they both appear as misty patches. Some observers, (not me as of yet), have, under good seeing conditions and a dark sky location, observed these galaxies in binoculars. The planet currently in Leo is Saturn and it appears as a bright yellowish star just to the right of Regulus upon darkness.

Council Contact details

COUNCIL OF THE WELLINGTON ASTRONOMICAL SOCIETY INC.

P.O.Box 3126 Wellington

Website at http://astronomy.wellington.net.nz

President	John Field	Ph 938-4526	john.field@paradise.net.nz
Vice-President	Vicki Irons	Ph 383-8710	virons@was.org.nz
Newsletter Editor	Brenda Johnston	Ph 478-9008	bjohnston@was.org.nz
Trsr/mmbrship	Lesley Hughes	Ph 472-5086	hpwas@hugpar.gen.nz,
Education/library	Vicki Irons	Ph 383-8710	virons@was.org.nz
Committee	Bill Parkin	Ph 472-5086 027 642-7093(m)	hpwas@hugpar.gen.nz
	Marilyn Head	Ph 389-0882	marilyn@actrix.co.nz
	Edwin Rodley	Ph 463-6992(w) 021-124-6513	edwinrod@was.org.nz
	Diane Zemanek	Ph 237-8191	diane.zemanek@axon.co.nz

What's in the Sky in May. Information supplied by Alan Gilmore, University of Canterbury, Mt John Observatory.

Sirius and the bright stars of **Orion** light up the western sky. **Canopus** is in the southwest sky. **Crux**, the Southern Cross, and the Pointers are southeast of overhead. Lower in the southeast the Scorpion is rising, upside down with Sagittarius below it. **Jupiter** appears below Sagittarius in the later evening. **Saturn**, midway up the north sky, makes an eye-catching pair with Regulus; the head star of **Leo** the lion. **Mars**, now distant -- 300 million km away -- and faint, is above **Castor** and **Pollux**, the head stars of **Gemini** the twins, low in northwest. **Sirius** is the first star to appear at dusk, midway down the western sky. Below, near the western skyline, it **Rigel** and **Betelgeuse** become visible. **Procyon,** right of Sirius, marks the other dog following Orion the hunter down the sky. **Crux**, the Southern Cross, is southeast of the zenith. **Scorpius** is midway up the southeast sky, below the Pointers. The **Milky Way** is brightest and broadest in the southeast toward Scorpius and Sagittarius. It remains bright but narrower across the zenith but fades in the western sky. The Clouds of Magellan, **LMC** and **SMC**, are midway down the southern sky, easily seen by eye on a dark moonless night. **Arcturus**, in the northeast, twinkles red and green as the air disperses its orange colour.

Saturn's **r**ings and its largest moon, Titan, are visible in small telescopes. The rings are 'closing ' now and will be edge-on in 2009. Saturn is around 1400 million km away. **Jupiter** now rises in the southeast around 9 p.m.; a very bright golden 'star'. Binoculars show it as a small disk. A telescope will reveal its four big moons strung out on either side of the planet. It is 700 million km away.

Phases of the Moon

New Moon - 6th May - 15.56	First Quarter Moon 13th April - 06.34	Full Moon 20th May - 22.26	Last Quarter 28th April – 14.53

Diary of Solar System Events in May 2008 in New Zealand. Information taken from the RASNZ website

Date (NZDT)	
May 3	Saturn stationary.
May 6	New Moon at 12:18 am NZST (5 May, 12:18 UT).
May 6	Moon at perigee, its closest to the Earth for the Lunar month, 357775 km.
May 10	Jupiter stationary.
May 10	29% lit Moon 5° above star Pollux, â Gem mag. 1.2, and 4° to lower left of Mars, mag. 1.3; evening sky.
May 12	Moon at first quarter 3:47 pm NZST (03:47 UT).
May 12	53% lit Moon 5° from star Regulus magnitude 1.4 and 7° from Saturn magnitude 0.6, evening sky.
May 14	Mercury at greatest elongation 21° east of Sun.
May 17	93% lit Moon 2.5° from star Spica, magnitude 1.1, evening sky.
May 20	Full Moon at 2:11 pm NZST (02:11 UT).
May 21	Moon at apogee, its greatest distance from the Earth for the Lunar month, 406401 km.
May 21	99.5% lit Moon 3° from the star Antares, magnitude 1.1 in morning sky. Occultation visible from eastern Brazil and southern South Africa.
May 22 to 24	Mars, crosses the Praesepe star cluster, evening sky.
May 24	83% lit Moon 2° from Jupiter in late evening sky.
May 27	Mercury and Neptune stationary.
May 27	64% lit Moon 4.5° from Neptune, magnitude 7.9, in morning sky. Occultation of Neptune visible from northern Africa and central Mediterranean Sea.
May 28	Moon at last quarter 2:56 pm NZST (02:56 UT).
May 29/30	43% lit Moon 7° to left of Uranus, magnitude 5.9, in morning sky. 33% Moon a similar distance below Uranus following morning.

Sunrise/Sunset

The table gives the time of Sun rise and Sun set for Wellington. These can be used from year to year as the times will not vary by more than a minute or two on the same date from year to year. Times are for a horizon level with the observer and do not allow for hills or mountains obcuring the horizon . New Zealand Standard time (NZST) is used in the winter months and is 12 hours ahead of Universal Time (UT)

which is virtually the same as Greenwich Mean Time (GMT)

Date	*Rise NZST*	*Set NZST*
May 1	*07.07*	*17.28*
May 11	*07.18*	*17.16*
May 21	*07.27*	*17.06*
May 31	*07.36*	*17.01*

Moonrise and Moonset tables for Wellington

Date	Rise	Set	Date	Rise	Set	Date	Rise	Set
1 Thu	0136	1453	Mon 12	1327	-----	Fri 23	1905	1017
2 Fri	0246	1516	Tue13	1351	0007	Sat 24	2006	1100
3 Sat	0259	1540	Wed14	1413	0114	Sun 25	2110	1135
4 Sun	0515	1607	Thu 15	1433	0218	Mon 26	2216	1205
5 Mon	0635	1639	Fri 16	1453	0321	Tue 27	2322	1231
6 Tue	0757	1719	Sat 17	1515	0423	Wed 28	------	1255
7 Wed	0918	1811	Sun 18	1539	0526	Thu 29	0030	1317
8 Thu	1031	1914	Mon 19	1607	0629	Fri 30	0139	1340
9 Fri	1133	2026	Tue 20	1641	0731	Sat 31	0251	1404
10 Sat	1220	2141	Wed 21	1721	0832			
11 Sun	1258	2256	Thu 22	1810	0928			

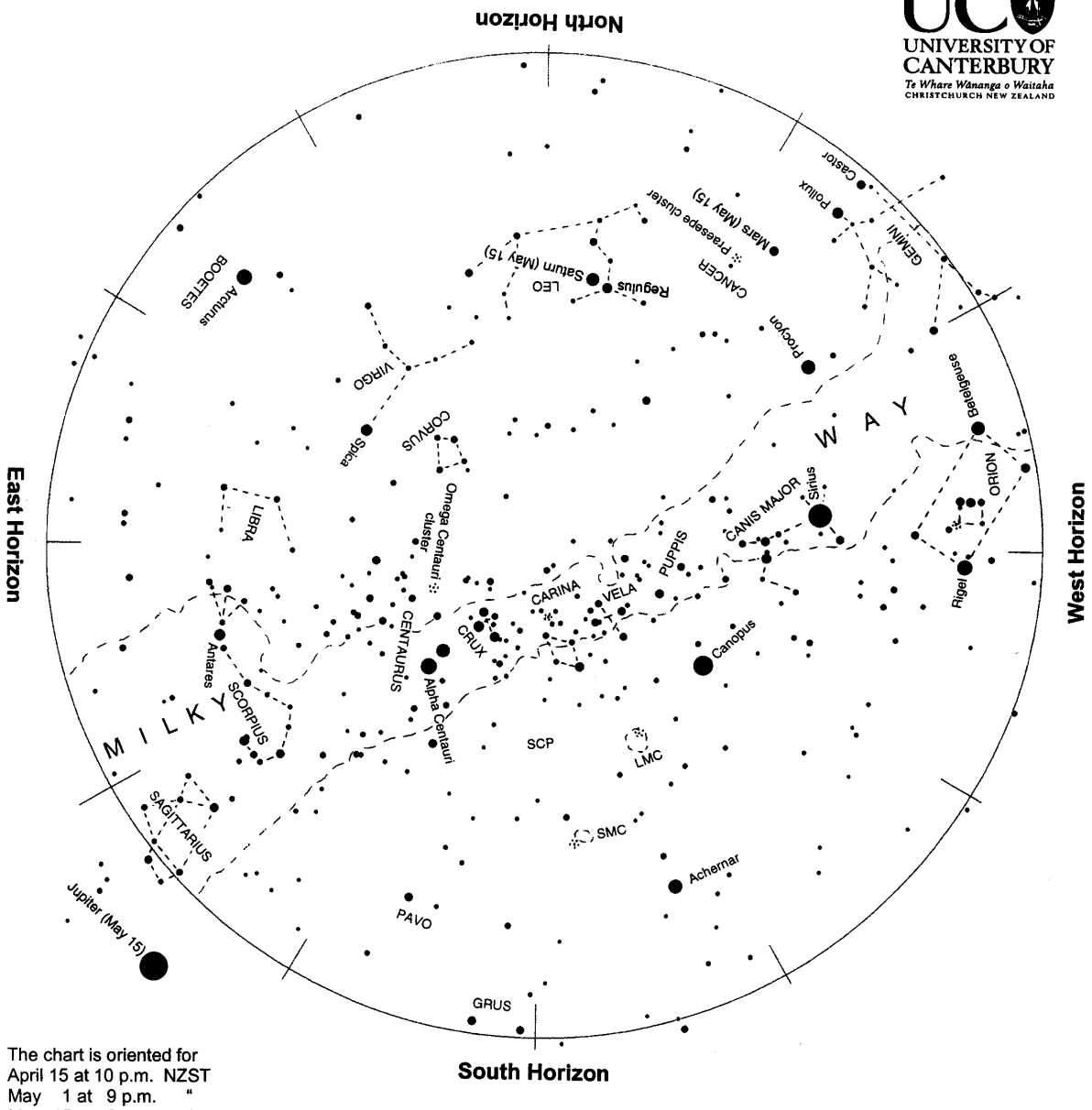
NZ IYA Website - Biographies Still Needed. Information taken from RASNZ email Newsletter Number 87, 25 November 2007

Marilyn Head, RASNZ Publicity officer, is still looking for notes of upcoming events and for local biographies.

She writes "The NZ International Year of Astronomy (IYA) site is up and running thanks to the sterling efforts of Roland Idacsyk at http://www.astronomy2009.org.nz To make it as useful as possible we'd like it to be comprehensive so please let me know if you want any events - and that includes any from now until the end of 2009 - to be posted. A critical part is the section that deals with NZ astronomers - past, present and overseas. We would like to include as many active astronomers as we can - it should end up being the Who's Who of NZ astronomy. So we would like all individuals and societies to send me (not Roland) names and very short profiles with any relevant links to be posted." Marilyn's email address is on www.writerfind.com/mhead.htm

Editorial Disclaimer

Views expressed in this newsletter are not necessarily those of the Society as a whole



The chart is oriented for
April 15 at 10 p.m. NZST
May 1 at 9 p.m. "
May 15 at 8 p.m. "
June 1 at 7 p.m. "

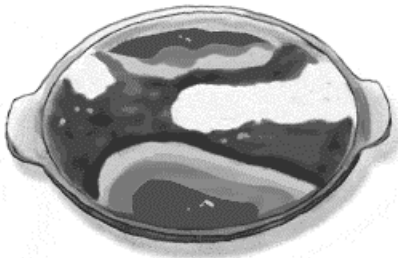
Evening sky in May 2008

To use the chart, hold it up to the sky. Turn the chart so the direction you are looking is at the bottom of the chart. If you are looking to the south then have 'South horizon' at the lower edge. As the earth turns the sky appears to rotate clockwise around the south celestial pole (SCP on the chart). Stars rise in the east and set in the west, just like the sun. The sky makes a small extra westward shift each night as we orbit the sun.

Sirius, the brightest star, is midway down the western sky. Directly below it, setting early, is Orion with 'the Pot', on its side, at its centre. Canopus, the second brightest star, is southwest of overhead. Saturn makes an eye-catching pair with Regulus in Leo, midway up the northern sky. Mars, orange and faint, is low in the northwest. Crux the Southern Cross, and The Pointers, are high in the southeast sky. The Scorpion, on its back, is below them. Jupiter, very bright and golden, rises in the southeast about 9 pm.

Chart produced by Guide 8 software; www.projectpluto.com. Labels and text added by Alan Gilmore, Mt John Observatory of the University of Canterbury.. www.canterbury.ac.nz

Whip up some El Niño pudding . Information taken from the NASA Space Place website and © to NASA



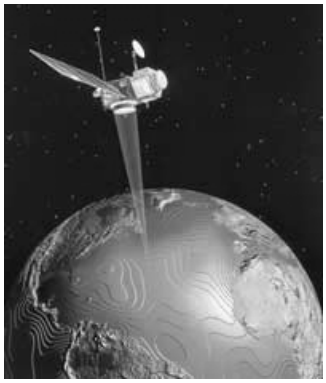
You have probably heard people blame "El Niño" for everything from bad weather to lost homework. Between "El Niño" and school holidays kids can't expect many good days at the moment. On the computer @ . http://spaceplace.nasa.gov/en/kids/topex_make1.shtml you can find the recipe for a colourful and delicious pudding as well as finding out all about "El Niño".

How do we know what is happening to the ocean temperatures around the Earth? The best way is to go up into space!

Where the ocean is warmer, sea level is slightly higher. On December 7, 2001, the Jason-1 satellite was launched into orbit around Earth. It continues the measurements that have been taken by the TOPEX/Poseidon satellite since 1992.

The Jason-1 spacecraft is studying how the oceans move energy around Earth.

Both satellites have a sensitive *altimeter* onboard. An altimeter measures height from itself down to the Earth's surface (land or water). Jason-1's altimeter is even more sensitive than TOPEX/Poseidon's.



The TOPEX/Poseidon spacecraft has been studying ocean currents since 1992