Issue No. 2 *November 1998*

DISTANT EKOs

The Kuiper Belt Electronic Newsletter

Edited by: Joel Wm. Parker

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CONTENTS

EDITORIALS & SHORT ARTICLES

The first issue of the *Distant EKOs* newsletter was well received, and with this second issue there are some new additions:

- A *Distant EKOs* webpage is now available at: `http://www.boulder.swri.edu/ekonews`

  The web pages contain current and past issues of the newsletter in various formats (PostScript, PDF, HTML) so those of you who prefer not extracting and compiling the LaTeX version can get the issues there.

  Also on these pages are:
  ⋆ Extensive lists of articles and references with links to the abstracts and full articles;
  ⋆ Tables of all EKOs and Centaurs, giving coordinates and published observations (photometry by filter, spectroscopy, etc.) for each object, with links to each article that presents the data;
  ⋆ A glossary targeted to the casual web-reader, journalist, etc. who may not know some of the specialized terms you may use in your papers. (If you have or know of similar glossary/jargon definition pages that I could include as links, or if you would like to add some definitions I missed, let me know.)
  ⋆ Links to other related sites of interest to Kuiper belt researchers.

- Also in response to those who weren't able or interested in dealing with the LaTeX version of the newsletter, at the beginning of each issue that is e-mailed out, there is a plain-text list of the contents (just titles, and references with contact/link information) at the beginning of the e-mail message. So now you can just browse that information to find out what new items are available, then go to the *Distant EKOs* webpage for more details.

And thanks again to everyone who has given me feedback on the Newsletter and the web pages. Any comments/suggestions are always welcome.

NEWS & ANNOUNCEMENTS

A new Centaur, 1998 SG_{35}, has been discovered, bringing the total number of known Centaurs to eight. See MPEC 1998-S41 (http://cfa-www.harvard.edu/cfa/ps/mpec/J98/J98S41.html). Observers are encouraged to obtain recovery observations to avoid losing this object.

PAPERS ACCEPTED TO JOURNALS

Pencil-Beam Surveys for Faint Trans-Neptunian Objects

B. Gladman[1], J. Kavelaars[2], P. Nicholson[3], T. Loredo[3] and J.A. Burns[3]

[1] Observatoire de Nice, B.P. 4229, 06304 Nice Cedex 4, FRANCE

[2] Dept. of Physics and Astronomy, McMaster University, CANADA

[3] Department of Astronomy, Cornell University, USA

Motivated by a desire to understand the size distribution of objects in the Edgeworth-Kuiper belt, an observing program has been conducted at the Palomar 5-m and Canada-France-Hawaii 3.6-m telescopes. We have conducted pencil-beam searches for outer solar system objects to a limiting magnitude of $R \sim 26$. The fields were searched using software recombinations of many short exposures shifted at different angular rates in order to detect objects at differing heliocentric distances. Five new trans-neptunian objects were detected in these searches. Our combined data set provides an estimate of ~ 90 trans-neptunian objects per square degree brighter than $\simeq 25.9$. This estimate is a factor of 3 above the expected number of objects based on an extrapolation of previous surveys with brighter limits, and appears consistent with the hypothesis of a single power-law luminosity function for the entire trans-neptunian region. Maximum likelihood fits to all self-consistent published surveys with published efficiency functions predicts a cumulative sky density $\Sigma(< R)$ obeying $\log \Sigma = 0.76(R - 23.4)$ objects per square degree brighter than a given magnitude R.

To appear in: Astronomical Journal, 116, 2042-2054

For preprints contact `gladman@obs-nice.fr`

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Observations of Distant Solar System Bodies

P. Magnusson[1], C.-I. Lagerkvist[1], J.S.V. Lagerros[1] M. Dahlgren[1] M. Lundström[1]

[1] Astronomiska Observatoriet, Box 515, S-752 20 Uppsala, Sverige

Multicolour VRI photometry and astrometry of one Centaur and seven Edgeworth-Kuiper objects were obtained. One object, 1994 JQ_1, may be as red as 5145 Pholus, the reddest minor planet previously known. The Centaur 1995 DW_2 has more moderate colour indices, similar to main-belt asteroids. Seven R-magnitudes were obtained for 1994 JS, 1995 FB_{21}, and 1995 GY_7 . No light variation above the expected noise is evident, apart from a few outliers. A total of 47 astrometric positions were obtained for the eight objects. The four nights of observations with the ESO New Technology Telescope covered 0.52 square degrees. Two previously unknown objects, 1995 FB_{21} and 1995 GY_7, were discovered. We estimate the density of Edgeworth-Kuiper objects brighter than $R = 24$ to be 5.3 per square degree of sky near the ecliptic.

To appear in: Astronomische Nachrichten, 319, 251

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A Dust Ring around ϵ Eridani: Analog to the Young Solar System

J.S. Greaves[1], W.S. Holland[1], G. Moriarty-Schieven[1], T. Jenness[1], W.R.F. Dent[2], B. Zuckerman[3], C. McCarthy[3], R.A. Webb[3], H.M. Butner[4], W.K. Gear[5] and H.J. Walker[6]

[1] Joint Astronomy Centre, 660 N. A'ohōkū Place, University Park, Hilo, HI 96720

[2] Royal Observatory, Blackford Hill, Edinburgh EH9 3HJ, U.K.

[3] Department of Astronomy, University of California, Los Angeles, Los Angeles, CA 90095

[4] SMTO, University of Arizona, Tucson, AZ 85721

[5] Mullard Space Science Laboratory, University College London, Holmbury St. Mary, Dorking, Surrey RH5 6NT, U.K.

[6] CLRC, Rutherford Appleton Laboratory, Chilton, Didcot, Oxon OX11 0QX, U.K.

Dust emission around the nearby star ϵ Eridani has been imaged using a new submillimetre camera (SCUBA at the JCMT). At 850 μm wavelength a ring of dust is seen, peaking at 60 AU from the star and with much lower emission inside 30 AU. The mass of the ring is at least ~ 0.01 $M_{\oplus}$ in dust, while an upper limit of 0.4 $M_{\oplus}$ in molecular gas is imposed by CO observations. The total mass is comparable to the estimated amount of material, 0.04–0.3 $M_{\oplus}$, in comets orbiting the Solar System.

The most probable origin of the the ring structure is that it is a young analogue to the Kuiper Belt in our Solar System, and that the central region has been partially cleared by the formation of grains into planetesimals. Dust clearing around ϵ Eri is seen within the radius of Neptune's orbit, and the peak emission at 35–75 AU lies within the estimated Kuiper Belt zone of 30–100 AU radius. ϵ Eri is a main-sequence star of type K2V (0.8 $M_{\odot}$) with an estimated age of 0.5–1.0 Gyr, so this interpretation is consistent with the early history of the Solar System where heavy bombardment occurred up to ≈ 0.6 Gyr. An unexpected discovery is substructure within the ring, and these asymmetries could be due to perturbations by planets.

To appear in: Astrophysical Journal Letters, 506, L133
For preprints, contact `jsg@jach.hawaii.edu`
or on the web at `www.journals.uchicago.edu/ApJ/journal/contents/ApJL/v506n2.html`

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Search for Trans-Neptunian Objects: An Automated Technique Applied to Images Obtained with the UH 8k CCD Mosaic Camera

P. Rousselot[1], F. Lombard[1], and G. Moreels[1]

[1] Observatoire de Besançon, BP 1615, 25010 Besançon Cedex, France

In this paper we present the results obtained with a new program dedicated to the automatic detection of trans-Neptunian objects (TNOs) with standard sets of images obtained in a same field of view. This program is available freely from the World Wide Web server of the Observatory of Besançon (`http://www.obs-besancon.fr/www/publi/philippe/tno.html`) and is designed to be used with the Munich Image Data Analysis System (MIDAS) developed by The European Southern Observatory (ESO). It has been tested with observational data collected with the UH 8k CCD mosaic Camera on October 27, 1997, at the prime focus of the CFH telescope (Mauna Kea, Hawaii). These observational data had lead, by the classical method of blinking, to a first detection of a new

TNO with a magnitude estimated at 23.6 and an unusually high orbital inclination (i$\simeq$33°). The program managed to detect this object, as well as detecting another TNO ($m_R \simeq$23.9), confirming its ability to detect faint moving objects.

To appear in: Astronomy & Astrophysics
For preprints contact `philippe@obs-besancon.fr`

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Detection of Water Ice on Nereid

M.E. Brown[1], C.D. Koresko[1], and G.A. Blake[1]

[1] Division of Geological and Planetary Science, Caltech

We report the detection of the 1.5 and 2.0 μm absorption bands of water ice in the near-infrared reflection spectrum of Neptune's distant irregular satellite Nereid. The spectrum and albedo of Nereid appear intermediate between those of the Uranian satellites Umbriel and Oberon, suggesting a surface composed of a combination of water ice frost and a dark and spectrally neutral material. In contrast, the surface of Nereid appears dissimilar to those of the outer solar system minor planets Chiron, Pholus, and 1997 CU_{26}. The spectrum thus provides support to the hypothesis that Nereid is a regular satellite formed in a circum-planetary environment rather than a captured object.

To appear in: Astrophysical Journal Letters, Dec 1, 1998.
Preprints on the web at `www.gps.caltech.edu/~mbrown/papers/pubs.html`

SUBMITTED PAPERS AND OTHER ARTICLES

Kuiper Belt Evolution due to Dynamical Friction

A. Del Popolo[1,2], E. Spedicato[2], M. Gambera[1,3]

[1] Istituto di Astronomia dell'Università Catania, Viale A.Doria, 6 - I 95125, Catania, Italy

[3] Dipartimento di Matematica, Università Statale di Bergamo, Piazza Rosate, 2 - I 24129, Bergamo, Italy

[3] Observatoria Astrofisico di Catania and CNR-GNA, Viale A.Doria, 6 - I 95125, Catania, Italy

Submitted to: Astronomy & Astrophysics
For reprints contact: `antonino@astrct.ct.astro.it`

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Origin of Trans-Neptunian Asteroids

A. T. Van Flandern[1]

[1] Meta Research, P.O. Box 15186, Chevy Chase, MD 20825

Published in: Meta Research Bulletin, vol. 4, #3, pp. 42-46
Available on the web at `www.metaresearch.org/mrb/trans-NeptunianAsteroids.htm`

CONFERENCE CONTRIBUTIONS

I've done a search of the abstracts from the recent DPS meeting to find all(?) papers related to the Kuiper belt. The abstracts are available via the web links given, but also through the AAS web page: `http://www.aas.org/publications/baas/v30n3/dps98/SL.htm`

The discovery of two irregular Uranian satellites

Nicholson, P. D.[1], Burns, J. A.[1], Gladman, B. J.[2], Kavelaars, J. J.[3], Marsden, B. G.[4], Williams, G. V.[4], Aksnes, K.[4], & Offutt, W. B.[5]

[1]Cornell, [2]CITA, [3]McMaster University, [4]SAO, [5]Cloudcroft NM

To appear in: BAAS: AAS/DDA meeting #30, paper 12.01

Abstract available at:

`http://adsabs.harvard.edu/cgi-bin/nph-bib_query?bibcode=1998DDA....30.1201N`

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High-eccentricity non-secular Three-Period Resonances inside Two-period Resonances (Kirkwood Gaps)

Ferraz-Mello, S.[1], Michtchenko, T.A.[1], & Roig, F.[1]

[1]IAGUSP, Univ. Sao Paulo, Brazil

To appear in: BAAS: AAS/DPS meeting #30, paper 10.01

Abstract available at:

`http://adsabs.harvard.edu/cgi-bin/nph-bib_query?bibcode=1998DPS....30.1001F`

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Elementary/Middle School Activities on Scale and Distance in the Solar System

Urquhart, M. L.[1]

[1]U of Colorado

To appear in: BAAS: AAS/DPS meeting #30, paper 18.P05

Abstract available at:

`http://adsabs.harvard.edu/cgi-bin/nph-bib_query?bibcode=1998DPS....30.1805U`

....

Middle School Adventures in Planetary Exploration

Limaye, S. S.[1] & Pertzborn, R. A.[1]

[1]Space Science & Engineering Center, UW-Madison

To appear in: BAAS: AAS/DPS meeting #30, paper 18.P11

Abstract available at:

`http://adsabs.harvard.edu/cgi-bin/nph-bib_query?bibcode=1998DPS....30.1811L`

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Giant planet orbital migration in the early Solar system

Malhotra, R.[1]

[1]LPI

To appear in: BAAS: AAS/DPS meeting #30, paper 21.09

Abstract available at:

`http://adsabs.harvard.edu/cgi-bin/nph-bib_query?bibcode=1998DPS....30.2109M`

....

Radial Migration of Planets Embedded in a Massive Planetesimal Disk

Hahn, J.M.[1] **& Malhotra, R.**[1]

[1]LPI

To appear in: BAAS: AAS/DPS meeting #30, paper 21.10

Abstract available at:

http://adsabs.harvard.edu/cgi-bin/nph-bib_query?bibcode=1998DPS....30.2110H

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Imaging a Circumstellar Disk around a Star with a Radial-Velocity Planetary Companion

Trilling, D. E.[1] **& Brown, R. H.**[1]

[1]LPL

To appear in: BAAS: AAS/DPS meeting #30, paper 23.03

Abstract available at:

http://adsabs.harvard.edu/cgi-bin/nph-bib_query?bibcode=1998DPS....30.2303T

....

Signatures of Planets on Extra-solar Circumstellar Dust Disk

Liou, J.-C.[1] **& Zook, H. A.**[2]

[1]GB Tech/Lockheed Martin, [2]NASA/JSC

To appear in: BAAS: AAS/DPS meeting #30, paper 23.04

Abstract available at:

http://adsabs.harvard.edu/cgi-bin/nph-bib_query?bibcode=1998DPS....30.2304L

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Observation of solar-system objects with the ISO satellite

Encrenaz, T.[1]

[1]DESPA, Paris-Meudon Observatory, France

To appear in: BAAS: AAS/DPS meeting #30, paper 26.01

Abstract available at:

http://adsabs.harvard.edu/cgi-bin/nph-bib_query?bibcode=1998DPS....30.2601E

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ISOPHOT observations of the Pluto-Charon system: Pluto's thermal lightcurve

Lellouch, E.[1]**, Laureijs, R.**[2]**, Schmitt, B.**[3]**, Quirico, E.**[4]**, De Bergh, C.**[5]**, Crovisier, J.**[5]**, & Coustenis, A.**[5]

[1]Obs. Meudon, [2]ISO SOC, Villafranca, [3]LGGE, Grenoble, [4]IAS, Orsay, [5]Obs. Meudon

To appear in: BAAS: AAS/DPS meeting #30, paper 27.P07

Abstract available at:

http://adsabs.harvard.edu/cgi-bin/nph-bib_query?bibcode=1998DPS....30.2707L

....

ISO Spectroscopic Observations of comets 22P/Kopff and 103P/Hartley 2

Crovisier, J.[1], Bockelee-Morvan, D.[1], Encrenaz, T.[1], Lellouch, E.[1], Altieri, B.[2], Leech, K.[2], Salama, A.[2], Griffin, M.[3], De Graauw, T.[4], Van Dishoeck, E.[5], Knacke, R.[6], & Brooke, T.Y.[7]

[1]Obs. Paris, [2]ESA, Villafranca, [3]Queen Mary and Westfield College, London, [4]SRON, Groningen, [5]Leiden Obs., [6]Penn. State Erie, [7]J.P.L.

To appear in: BAAS: AAS/DPS meeting #30, paper 27.P08

Abstract available at:

`http://adsabs.harvard.edu/cgi-bin/nph-bib_query?bibcode=1998DPS....30.2708C`

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Centaur 5145 Pholus As a Comet Nucleus

Cruikshank, D. P.[1], Roush, T. L.[1], Bartholomew, M. J.[1], Pendleton, Y. J.[1], White, S. M.[1], Bernstein, M. P.[1], Dalle Ore, C. M.[1], Khare, B. N.[1], Geballe, T. R.[2], Davies, J. K.[2], Owen, T. C.[3], Tholen, D. J.[3], De Bergh, C.[4], Bell, J. F., III[5], Brown, R. H.[6], & Tryka, K. A.[7]

[1]NASA Ames, [2]JAC Hawaii, [3]IFA Hawaii, [4]Obs. Paris, [5]Cornell U., [6]LPL Arizona, [7]NAU/JPL

To appear in: BAAS: AAS/DPS meeting #30, paper 42.01

Abstract available at:

`http://adsabs.harvard.edu/cgi-bin/nph-bib_query?bibcode=1998DPS....30.4201C`

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Pluto's Atmosphere above 1500 km

Krasnopolsky, V. A.[1] & Cruikshank, D. P.[2]

[1]CUA/NASA GSFC, [2]NASA Ames

To appear in: BAAS: AAS/DPS meeting #30, paper 49.06

Abstract available at:

`http://adsabs.harvard.edu/cgi-bin/nph-bib_query?bibcode=1998DPS....30.4906K`

. . . .

Seasonal Monitoring of Pluto: 1998 Status Report

Buie, M. W.[1] & Grundy, W. M.[1]

[1]Lowell Observatory

To appear in: BAAS: AAS/DPS meeting #30, paper 49.07

Abstract available at:

`http://adsabs.harvard.edu/cgi-bin/nph-bib_query?bibcode=1998DPS....30.4907B`

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Reflectance Spectroscopy of the Individual Members of the Pluto/Charon System: HST/NICMOS Results

Dumas, C.[1], Terrile, R. J.[1], Burgasser, A.[2], Brown, R.[3], Rieke, M.[3], Schneider, G.[3], Thompson, R.[3], & Koerner, D.[4]

[1]JPL, [2]Caltech, [3]Univ. Arizona, [4]Univ. Pennsylvania

To appear in: BAAS: AAS/DPS meeting #30, paper 49.08

Abstract available at:

`http://adsabs.harvard.edu/cgi-bin/nph-bib_query?bibcode=1998DPS....30.4908D`

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The Diameter of Pluto: A Re-Analysis of Kuiper's Disk Meter Measurements

Marcialis, R.L.[1] **& Merline, W. J.**[2]

[1]LPL/U. Arizona, [2]SWRI

To appear in: BAAS: AAS/DPS meeting #30, paper 49.P10

Abstract available at:

`http://adsabs.harvard.edu/cgi-bin/nph-bib_query?bibcode=1998DPS....30.4910M`

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Two Distinct Populations of Kuiper Belt Objects

Tegler, S.C.[1] **& Romanishin, W.**[2]

[1]Northern Arizona Univ, [2]Univ Oklahoma

To appear in: BAAS: AAS/DPS meeting #30, paper 51.01

Abstract available at:

`http://adsabs.harvard.edu/cgi-bin/nph-bib_query?bibcode=1998DPS....30.5101T`

....

Spectroscopic observations of Edgeworth-Kuiper Belt (EKB) objects

Barucci, M.A.[1], **Tholen, D. J.**[2], **Doressoundiram, A.**[3], **Fulchignoni, M.**[4], **& Lazzarin, M.**[5]

[1]Paris Obs., [2]Univ. Hawaii, [3]Torino Obs., [4]Univ. Paris VII, [5]Padova Obs.

To appear in: BAAS: AAS/DPS meeting #30, paper 51.02

Abstract available at:

`http://adsabs.harvard.edu/cgi-bin/nph-bib_query?bibcode=1998DPS....30.5102B`

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Physical Studies of Kuiper Belt Objects with NICMOS

Noll, K. S.[1] **& Luu, J.**[2]

[1]STScI, [2]Leiden Univ.

To appear in: BAAS: AAS/DPS meeting #30, paper 51.03

Abstract available at:

`http://adsabs.harvard.edu/cgi-bin/nph-bib_query?bibcode=1998DPS....30.5103N`

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Infrared Spectroscopy of Centaurs and Irregular Satellites

Brown, M. E.[1]

[1]Caltech

To appear in: BAAS: AAS/DPS meeting #30, paper 51.04

Abstract available at:

`http://adsabs.harvard.edu/cgi-bin/nph-bib_query?bibcode=1998DPS....30.5104B`

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Evolution of an Initial Massive Edgeworth-Kuiper Belt: Accretion and Collisional History

Davis, D. R.[1] **& Farinella, P.**[2]

[1]Planetary Science Institute, [2]Universit'a di Pisa

To appear in: BAAS: AAS/DPS meeting #30, paper 51.05

Abstract available at:

`http://adsabs.harvard.edu/cgi-bin/nph-bib_query?bibcode=1998DPS....30.5105D`

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Collisional and Cratering Rates in the Kuiper Belt: Applications to Surface Activation and Modification

Durda, D. D.[1] & Stern, S. A.[1]

[1]Southwest Research Institute

To appear in: BAAS: AAS/DPS meeting #30, paper 51.06

Abstract available at:

`http://adsabs.harvard.edu/cgi-bin/nph-bib_query?bibcode=1998DPS....30.5106D`

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Simulations of the Formation of the Oort Cloud of Comets

Dones, L.[1], Duncan, M. J.[2], Levison, H. F.[3], & Weissman, P. R.[4]

[1]NASA Ames and SJSU Foundation, [2]Queen's University, [3]Southwest Research Institute, Boulder, [4]Jet Propulsion Laboratory

To appear in: BAAS: AAS/DPS meeting #30, paper 51.07

Abstract available at:

`http://adsabs.harvard.edu/cgi-bin/nph-bib_query?bibcode=1998DPS....30.5107D`

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Stellar Perturbations of the Kuiper Belt

Weissman, P. R.[1]

[1]Jet Propulsion Laboratory

To appear in: BAAS: AAS/DPS meeting #30, paper 51.08

Abstract available at:

`http://adsabs.harvard.edu/cgi-bin/nph-bib_query?bibcode=1998DPS....30.5108W`

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The Spacewatch Survey for Bright Kuiper Belt Objects

Larsen, J. A.[1]

[1]Lunar and Planetary Laboratory, University of Arizona

To appear in: BAAS: AAS/DPS meeting #30, paper 51.P09

Abstract available at:

`http://adsabs.harvard.edu/cgi-bin/nph-bib_query?bibcode=1998DPS....30.5109L`

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Search for Trans-Neptunian Objects: a new MIDAS context confronted with some results obtained with the UH 8k CCD Mosaic Camera

Rousselot, P.[1], Lombard, F.[1], & Moreels, G.[1]

[1]Observatoire de Besanceon

To appear in: BAAS: AAS/DPS meeting #30, paper 51.P10

Abstract available at:

`http://adsabs.harvard.edu/cgi-bin/nph-bib_query?bibcode=1998DPS....30.5110R`

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Progress Report on the 1.8-meter Spacewatch Telescope

McMillan, R. S.[1], Bressi, T. H.[1], Descour, A. S.[1], Gehrels, T.[1], Larsen, J. A.[1], Montani, J. L.[1], Perry, M. L.[1], Read, M. T.[1], & Tubbiolo, A. F.[1]

[1]LPL/U.Az.

To appear in: BAAS: AAS/DPS meeting #30, paper 51.P11

Abstract available at:

`http://adsabs.harvard.edu/cgi-bin/nph-bib_query?bibcode=1998DPS....30.5111M`

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Spectroscopic investigation of the Centaurs

Lazzarin, M.[1] **& Barucci, M.A.**[2]

[1]Astronomy Dpt., Padova University, [2]Observatoire de Paris

To appear in: BAAS: AAS/DPS meeting #30, paper 51.P12

Abstract available at:

http://adsabs.harvard.edu/cgi-bin/nph-bib_query?bibcode=1998DPS....30.5112L

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1-2 Micron Grism Spectroscopy of Centaurs and Kuiper Belt Objects from NICMOS

McCarthy, D.W.[1]**, Campins, H.**[1]**, Kern, S.**[1]**, Brown, R. H.**[1]**, Stolovy, S.**[1]**, & Rieke, M.**[1]

[1]UAZ

To appear in: BAAS: AAS/DPS meeting #30, paper 51.P13

Abstract available at:

http://adsabs.harvard.edu/cgi-bin/nph-bib_query?bibcode=1998DPS....30.5113M

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The Dusty Carbon Monoxide Coma of (2060) P/Chiron

Sekiguchi, T.[1]**, Watanabe, J.**[1]**, & Boice, D. C.**[1]

[1]National Astronomical Observatory of Japan

To appear in: BAAS: AAS/DPS meeting #30, paper 51.P14

Abstract available at:

http://adsabs.harvard.edu/cgi-bin/nph-bib_query?bibcode=1998DPS....30.5114S

The *Distant EKOs* Newsletter is dedicated to provide researchers with easy and rapid access to current work regarding the Kuiper belt (observational and theoretical studies), directly related objects (e.g., Pluto, Centaurs), and other areas of study when explicitly applied to the Kuiper belt.

We accept submissions for the following sections:
⋆ Abstracts of accepted papers
⋆ Titles of submitted (but not yet accepted) papers and conference articles
⋆ Thesis abstracts
⋆ Short articles, announcements, or editorials
⋆ Status reports of on-going programs
⋆ Requests for collaboration or observing coordination
⋆ Table of contents/outlines of books
⋆ Announcements for conferences
⋆ Job advertisements
⋆ General news items deemed of interest to the Kuiper belt community

A LaTeX template for submissions is appended to each issue of the newsletter, and is sent out regularly to the e-mail distribution list. Please use that template, and send your submission to:

`ekonews@boulder.swri.edu`

The *Distant EKOs* Newsletter is available on the World Wide Web at:
`http://www.boulder.swri.edu/ekonews`
Recent and back issues of the Newsletter are archived there in various formats. The web pages also contain other related information and links.

Distant EKOs is not a refereed publication, but is a tool for furthering communication among people interested in Kuiper belt research. Publication or listing of an article in the Newsletter or the web page does not constitute an endorsement of the article's results or imply validity of its contents. When referencing an article, please reference the original source; *Distant EKOs* is not a substitute for peer-reviewed journals.

Moving ... ??

If you move or your e-mail address changes, please send the editor your new address. If the Newsletter bounces back from an address for three consecutive issues, the address is deleted from the mailing list. All address changes, submissions, and other correspondence should be sent to:

`ekonews@boulder.swri.edu`