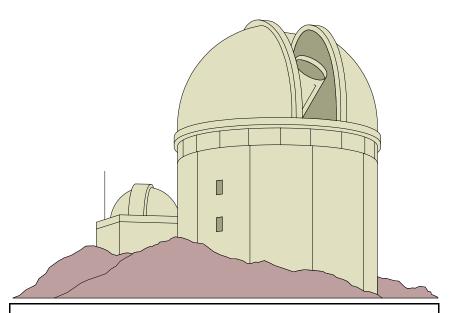
Hamilton Centre RASC BOX 1223 Waterdown, ON LOR 2H0

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Neighbouring Centres are Building Observatories

The Hamilton Centre's Leslie V. Powis Observatory has been the focus of much attention in the past several weeks. Other RASC Centres are looking to learn from our experiences running South-Western Ontario's Best Independently Operated Observatory.

The Official Publication of the Hamilton Centre of



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lease tell me you did something on Astronomy Day! As far as weather goes, it was rotten. In fact, the weather situation is one of the subjects in this month's issue. It seems that nationwide, the weather is simply

not cooperating with our observing efforts. Since we have all been cooped up inside, we have had to direct our energies elsewhere. A lot of that energy is in the direction of improving this fine organization that we all belong too. As you know many changes are underfoot, and more are coming. Our President brings some of these to light in his comments this month.

One thing that we have all identified is the need for the National Centre to be the glue that binds the Centres together. To that end, a number of centres have reminded us that their doors are always open, and that you can attend any of their meetings or events. Of course, that is mutual, so please extend a hearty welcome to friends visiting us from other Centres. Glenn Norman of Toronto, with tongue firmly planted in cheek, has dubbed this the new Royal Astronomical Society of Canada Inter-Centre Visitation & Comaraderie Improvement program (RASC-IC-VCI. Pronounced as RASK-ICK-VICKI.) What a great idea!

A special event is scheduled for June 8th, our Big Barbeque Building Bash, where you get to bash the building, and belch at the barby. If you are aware of things that need to be worked on at the Observatory, jot'em down, and get them to the Job Jar, in care of me or Bob Botts. Then come on out Saturday, June 8, 1996. Bring your toolbox, your paintbrush, your rake, your gaspowered weed-eater, some window cleaner, and as many friends as you've got. Pack a picnic, and lend a hand. We will be working on odd jobs all day, and then having a BBQ with our friends. If you aren't up to handyman status, come out - there's lots to do, and a lot of fun scheduled. We may even have a camp out overnight!

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- EDITORIAL
- FROM THE KEYBOARD OF THE PRESIDENT
- WHERE HAVE ALL THE GOOD COMETS GONE?
- RASC Hamilton Centre March Meeting
 - NEIGHBOURING CENTRES EXTEND INVITATIONS
- RASC Hamilton Centre April Meetings
- FRIENDS GET NEW SCOPES SO WE ALL GET BAD WEATHER



MEMBERSHIP APPLICATION

Application for Membershipin the HAMILTON CENTRE of the ROYAL ASTRONOMICAL SOCIETY OF CANADA. Membership Year officially concludes September 30. We welcome people of all ages, skills, and interests in things Astronomical. Please make your cheque payable to: "RASC Hamilton Centre" and mail to the Treasurer c/o the address on the reverse. Associate membership is for those in other Astronomy Clubs. Please state the club. Full members receive The Observer's Handbook (approximately \$20 value). Free 3 month Trial available - send no money!

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WHAT'S HAPPENING!

Monthly Meetings are held by the Hamilton Centre at McMaster University Medical Centre Ewart Angus 1A6 8pm. Next meeting is:

May 2 - David Franklin of the Canadarm Team at Spar Aerospace on Canada's Contribution to Space.

May 8- Toronto Centre Special - Terry Dickinson, Summer Skies

May 14 - Toronto Centre - Dr. Ron Butta on Galactic Rings

May 25- London Centre Annual Banquet

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May 30 - Orbit Deadline - Get your articles in!

June 6 - Ivan Semeniuk of the Discovery Channel on the new solar systems being discovered by radial velocity measurements, and some free-ranging speculation on the impact on SETI.

NAME	Phone	Email Address
Observatory	689-0266	http://ad-here.com/RASC/
Astronomy emailing list	subscribe	bigbang@ad-here.com
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Secretary: Dave Coulson	634-4436	
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Curator: Les Nagy	387-0690	lnagy@netaccess.on.ca
National:Mike Jefferson	648-8919	
General:Charles Baetsen	524-0148	charlesb@abelcomputers.com
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Editor: Colin Haig	577-5349	chaig@radgrp.com



FROM THE KEYBOARD OF THE PRESIDENT

finally got some sleep this month! Well, at least at the end of it!

Despite the weather, some things of note happened this month, like the NFCAAA banquet on April 27th. There has been an unbelievable amount of email generated over the election of the R.A.S.C.s 1st vice president, and, there are plans afoot for the Observatory.

First, if you are attending this months General meeting, there may be a Toronto Centre member sitting near you. If you don't recognize them, introduce yourself, and welcome them to Hamilton. Why this month? Well, as part of the discussion about the 1st VP election, Glenn Norman, a member of the Toronto Centre, wondered why more cross-Centre visiting was not done? So, when I put out the notice about the Hamilton Centres meeting, and who the guest speaker was, Glenn wrote and said that he would attend, along with his partner, Michelle. Gord Skerrat also wrote and asked for directions. So, perhaps tonight we will start to see people from other Centres coming to visit, on a regular basis. If they can make the trip, perhaps some of us can make it, too. However, with two astronomy organizations in Hamilton, and



Visit RASC Centres when you are Travelling

therefore two meetings to attend, there are only so many nights when I can disappear off out, leaving my family behind. That should not stop some of you, however, particularly the people who live in Burlington and Oakville.

On to the Great 1st VP Debate. As some of you may know, Peter Cerayolo is the 2nd VP

of the R.A.S.C., and he is well known in these parts, having started off his career in astronomy right here in Hamilton. Peter was also with Doug Hube, when he came to visit back in November, and when he was our December speaker. At the March National Council meeting, attended by Colin Haig and myself, it was announced that, although normally, the 2nd VP was expected

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to move up to 1st VP, that Peter had requested that the nominations committee find someone else, so that a proper election could take place. The person they found is Randy Attwood. Randy is well known on the National scene, and in Toronto. But this is not the case in Hamilton. Randy has been



a long time member of the Toronto Centre, and has long been known on the National Scene, particularly so as one of the National Reps from Toronto. Randy is a very hard working fellow, and he has served his Centre well. Anyway, the debate that has been going on over the Internet has, at times, tended toward being a little on the nasty side. Even I was accused of this, privately. I thought that I had been a little misunderstood,

but I took the next opportunity to set the record straight. Even so, it looks like tempers have been flaring, but not between the two contestants! All the heat and nastiness have generally been toward others. Now, when I get home from work, there are ten or twenty messages waiting for me from the RASCListserver.

On to the NFCAAA. Once again, a superb meal. Niagara Centre had said that the food would be even better this year than last, and they did not disappoint. Prime Rib, and all the fixings, tremendous salads, and the desserts, oh, the desserts! Attending were Dave Coulson and his wife, Pam, John Kezys, myself, along with Ann and Bill Tekatch. Ann and I both had to stand up and say something about our respective organizations, and I crowed about our recently completed CCD camera. The speaker was Terry Dickinson, who showed some of the finest slides I have ever seen. His pictures of Hyakutake where stunning. I wish I had the words, and the eloquence in me to properly do them justice, but I do not. I hope you get a chance to see them (check in SkyNews), but unless you see the original slides, you will only get an indication of what I mean as magazine paper will only render them as a pale imitation, at best. His other pictures, taken at some of the finest astronomical sites in the world were sufficient to stun his audience. Glorious. All in all, the evening was very enjoyable, and I think that many of the attendees will return next year. I would like to, but it will be somebody else's turn to stand up and talk about the Hamilton Centre.

This was not the only contact with the Niagara Centre that we had this month. On April 21st, an ugly, cold, cloudy Sunday afternoon (as if there were any other kinds, this April), Ron Gasparini and another gentleman from Niagara (I'm sorry I didn't catch his name) came to view our Observatory, and discuss problems and good things we like about our site. They stayed for an hour and a half, and I hope that they were able to gather some useful information.

Finally, .the comet. What can anyone say? For many of us, who have



he Pnenomena Page is a place for tidbits of information that we just can't do without.

<u>Trial Membership Program</u>: The Hamilton Centre has started the Trial Membership program, effective immediately! New members will receivethree (3) months of ORBIT, our leading newsletter, three months of attendance at all of our functions, and are welcome to come out to the observatory at any time, under the supervision and guidance of established club members. We encourage them to join at the end of their 3 month trial. <u>Fun Stuff at the National General Assembly:</u> A plan is in the works to put together a comet display at the Edmonton General Assembly.

- 1. The display would be ineligible for any prize.
- 2. The title would be The TALE OF A COMET.
- 3. Each member's submissions would be mounted on 8.5 x 11 paper or cardboard one print to a page and would include the photo (North up, East to the left), and on the same page, typed:
 Universal Date and Time of exposure (Not local time and date),
 Technical information: focal length, f/stop and film used
 The member's name, Centre (if any), location where photo was taken (urban, suburban, rural)

Other relevant comments such as sky conditions

4. On the back, the submitter would indicate if he/she wants the photo returned or is willing to donate it to the RASC Archives.

More details will follow...

CAMTECH PHOTOGRAPHIC Services Limited

588 Concession Street Hamilton, Ontario, L8V 1B1 389-8545

even fit in my old Civic which used to frequent star-parties up until a couple of years ago!

But, how were the dark views you say? Well, the moon was so bright and Clint's got a neighbour that insists on lighting up Clint's yard better than his own, so deep sky viewing was out of the question. Also, the scope is not designed to work without a shroud over the truss tubes and this item isn't finished yet. I tried some double stars but the seeing was just so lousy, everything was boiling



too bad to make any critical opinions on the optics. That's about it. I'll be unveiling it at the May RASC meeting (probably the and last time any of you will see it together in the light!). After that I can get all kinds of "battle scars" on it like are on my 13"!

Clear skies,

Dave

ps. And I really mean "Clear Skies" because you all know that a new scope brings 4-6 weeks of cloudy weather -- this is the reason I sat on the mirror thoughout March during Hyakutake otherwise, despite being a life member, I would probably have been be tossed out of the RASC.

And from Dave Clark, in London, Ontario:

I am now awaiting my "first light" through a used Celestron C8+ I picked up on the weekend. Of course it will now be overcast in London for the next two months. Any comments from people on the use and maintenance of a C8 would be greatly appreciated. -Dave Clark, London Centre

And finally, lets have pity on Scott Young, in Winnipeg, Manitoba:



Hi all. Well, after wading through the mass of mail on [the email service], I'll mention some other "wading" I've been doing: the Glenlea Observatory has flooded. We currently have about 2 feet of water in it, and will probably peak at about 3-4 feet this week. We did see it coming, and so our C-14, computer, etc. are out, but the warm room is likely to be a total loss.

Some of you may remember the picture in S&T in 1979, showing our observatory during the last great flood; this time it is comparable or slightly worse. I hope that the structure is okay; there was a lot of ice floating around last week.

So, is this just an old astronomers' superstition, or what?
—Colin Haig

suffered from comet envy, especially reading accounts of the 19th century Great Comets, Hyakutake has finally shown us what a Great Comet is all about. To think that it is only the warm up act for Hale-Bopp, next year. is mind-boggling. What will the Hamilton Centre do? I suspect that we will be involved with another virtual star party on the Internet, and we will be host to all sorts of people. I, however, intend to take some great pictures, and do

some observing. I have had my name on the front page of the paper, next year, its' someone else's turn.

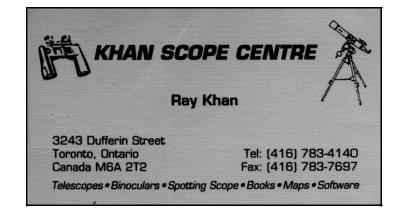


I think I have said enough for this month. No doubt, you will find me droning on and on and on about a couple of these topics at the meeting, but hopefully in the discussions that have been known to occur at such times, we'll all learn something. Thanks.

Roger Hill

email: roger@ad-here.com

voice: (905)878-5185 fax: (905)878-3974





By Ray Badgerow

The close approach of Comet Hyakutake to the Earth on March 25th led me to put this event into a historic perspective. Our President, Roger Hill asked at the March meeting "Where have all the good comets gone?". This article addresses that question. Table 1 is based upon Sky & Telescope, January 1982(Comet Digest). Table 2 deals with past close approaches to the Earth, and Table 3 with future close approaches by periodic comets.

Table 1: Where Have All	the	e Good	Comets Gone?	April 1,1996
Comet	I	RA	Dec	r(AU)-Sun
	h	, m	Ø	
1811 I Flaugergues	22	8.1	-71	164.9
1843 I Great March Come	t 6	40.1	-12	114.9
1858 VI Donati	11	33.8	-51	134.2
1882 II Great Sept.Come	t 6	43.1	-12	109.3
1910 I Great Jan. Comet	20	6.4	+ 7	109.5
1957III Arend-Roland	3	57.2	+69	64.5
1957 V Mrkos	15	45.1	-52	63.2
1962 III Seki-Lines	8	31.3	+10	58.9
1965 VIII Ikeya-Seki	6	43.3	-11	51.4
1970 II Bennett	2	22.7	+31	47.1
1973 XII Kohoutek	22	12.7	-58	43.7
1976 VI West	19	36	-15	41.3
1983 VII Iras-Araki-Alc	3	01.4	-73	28.9
1990 XX Levy	7	51.1	+47	16.5

Table 2:	Closest	Appro	aches	to the Earth by Comets(<0.1020 AU)
Distance(AU) Da	ate(TI	[)	Permanent Designation
0.0151	1770	July	1.7	D/1770 L1(Lexell)
0.0229	1366	Oct.	26.4	55P/1366 U1(Tempel-Tuttle)
0.0312	1983	May	11.5	C/1983 H1(Iras-Araki-Alcock)
0.0334	837	Apr.	10.5	1P/837 F1(Halley)
0.0366	1805	Dec.	9.9	3D/1805 V1(Biela)
0.0390	1743	Feb.	8.9	C/1743 C1
0.0394	1927	Jun.	26.8	7P/Pons-Winnecke
0.0437	1702	Apr.	20.2	C/1702 H1
0.0617	1930	May	31.7	73P/1930 J1(S-W3)
0.0628	1983	Jun.	12.8	C/1983J1(Sugana-Saigusa-Fuj)
0.0682	1760	Jan.	8.2	C/1760 Al(Great Comet)
0.0839	1853	Apr.	29.1	C/1853G1(Schweiser)
0.0879	1797	Aug.	16.5	C/1797P1(Bouvard-Herschel)
0.0884	374	Apr.	1.9	1P/374 E1 (Halley)
0.0898	607	Apr.	19.2	1P/607 H1 (Halley)
0.0934	1763	Sept.	23.7	C/1763 S1 (Messier)
0.0964	1864	Aug.	8.4	C/1864 N1 (Tempel)
0.0982	1862	July	4.6	C/1862 N1 (Schmidt)
0.1019	1996	Mar.	25.3	C/1996 B2 (Hyakutake)
0.1019	1961	Nov.	15.2	C/1961 T1 (Seki)



I don't know about the rest of you, but have you noticed that as soon as you get a new scope, eyepiece, or accessory, that the bad weather rolls on in? Joe O'Neill from the London Centre first pointed this out to me. Well, some RASCals out there have been building or buying new telescopes. This is just a few snippets from some of the guilty RASCals.

From David Lane, Halifax, Nova Scotia Hi v'all:

Well, last night was the first light for my newly completed 18" f4.55 truss-dob scope (probably the largest scope on mainland NS (sorry Roy:-). It took place in the company of Clint Shannon in his yard in East Petpeswick. The scope is finished in natural wood colour and is more-or-less modelled after the commercial Tectron dobs (except with large altitude bearings) and certain of my own mods based on the experience building my last scope (a 13" truss dob).

Many of you will know that I waited just short of 3 years for a Coulter 17.5" mirror only to have them go bankrupt along with my 1/3 deposit! I then quickly ordered another for the independant retired military/space optician Tom Waineo (of Florida) (at considerable more cost -- over double). He delivered promptly and if his test results are worth their salt, it'll be a great mirror. But I ramble...

Usually these first experiences are just that, experiences with little sky gazing going on. First light on my 13" was just a fuzzy white glow -- in the excitment of the moment, I forgot to put in the diagonal mirror and the only light was what was reflecting off the cotton batton stuffed in the diagonal holder!

But, in this case I was better prepared and it went very well. The motions were very smooth which is always a relief with a large scope. I did find out that I need a rather large step stool to use the thing adequately! Gosh, its a big scope! The first object I viewed was the moon before dark and thank goodness I could achieve a focus -- this was my greatest fear because I had not measured the focal length of the primary -- I relied on the measurement provided by the mirror maker.

But alas, not all my eyepiece combinations would focus and none would focus when I removed my own corrective optics (glasses), so it looks like I've got to move the primary forward 1/2 inch or cut the tubes shorter (Uggh!).

A couple of other abnormalities were noted which should be easy to correct. It does fit nicely in my current car (van) and I think it would

received a tax reciept. It was sent out in Dec.1995.

Recorder: I gave Dave the archived copies of past meetings on floppy disk. Librarian: Donation of 3 new books about the 1994 ISDC conference in Toronto from my friend Ernestine Kopytko.

Secretary: Got letter from Head Office asking to send Rosemary a farewell card. Will pass out at next meeting. We also received a calendar from Fifth House Publishing.

Editor: We got a letter from Head Office dealing with back issues of Orbit from 1994-95. Needed Ray to send the minutes of last meetings via email. No lawsuits over Aarbit. Colin will be going to California to visit with Bob Hildebrand, "NOTC". We should send something from Hamilton Centre. Curator: Mount on Ford Scope, do it by June. Will clear out more trees to maximize Chilton Building. The Ford is better suited to Chilton. Charles rebutted and Colin commented. We should hold a real meeting to discuss this matter. Received paperwork from Stewart Attesley, go over complete inventory. Will take vacuum coating system off Doug Welch. Need to discuss how it will be done to benefit Centre. Centre members will be done at cost. This will be discussed later when hard numbers are available. Charles:Webperson. Pictures of comet on Web site. Have to rearrange images on Web page.

Old Business: Trees, Bob contacted Millgrove Wood Products. Will chip for \$500. (Do it ourselves). Cutting will take 1 week, cannot do before end of May. Bob may get another price from someone else. Bill Parker has a chipper.

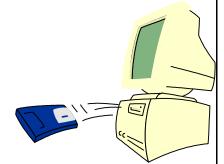
Bob prefers contract service over an undefined entity. Will cut 1 row around parking lot, 4 rows deep on south and west sides.

New Business: Colin, we need a meeting to plan some work parties. Make a list of items to repair or return. (Second Sat in June,June 8th rainday June 22.)

Les motioned to adjourn, John seconded.

The meeting ended at 11:05 pm.

Join South-Western Ontario's
Astronomy List! Discuss with friends
and peers from all over!
Send an email to:
bigbang@ad-here.com
Put the words:
subscribe bigbang
in the subject and the first line.



Source: Minor Planet Center home page

Table 3: Future Close Approache	es to	Ear	rth 1994-	2200(<0.128 AU)
Object Da	ate(TI	OB)		CA Dist(AU)
73P/Schwassmann-Wachmann 3 *	2006	05	10.688	0.0912
45P/Honda-Mrkos-Padjuskova'	2011	08	15.275	0.0675
45P/Honda-Mrkos-Padjuskova'	2017	02	11.104	0.0864
46P/Wirtanen	2018	12	18.464	0.0846
15P/Finley	2060	10	27.042	0.0473
104P/Kowal 2	2060	12	10.766	0.0928
73P/Schwassmann-Wachmann 3	2070	06	27.074	0.1264
21P/Giacobini-Zinner	2112	10	8.355	0.0469
45P/Honda-Mrkos-Padjuskova'	2130	02	18.324	0.0756
8P/Tuttle	2130	12	23.972	0.0890
1P/Halley	2134	05	8.006	0.0881
62P/Tsuchinshan 1	2140	01	26.530	0.1211
26P/Grigg-Skjellerup	2146	04	12.253	0.0694
45P/Honda-Mrkos-Padjuskova'	2157	01	29.696	0.1203
72P/Denning-Fujikawa	2190	11	20.720	0.0985
* split into 4 pieces October	1995			



by Ray Badgerow

Summarized Minutes of the March 7, General Meeting, Room 1A6, McMaster University

Roger opened the meeting at 8:10pm .A new astronomy service got started up this afternoon called big bang. It is used for people in Southwestern Ontario for all clubs.(bigbang@ad-here.com). Join big bang.

National Centre will meet 2 weeks this Saturday to vote on important things. Board meetings will be 3rd Thursday of each month at Observatory.

The CCD Camera is much closer to being fully operational, in time for Comet Hyakutake. There will be a live internet event on the night of March 23?. Go out to the Observatory.

John Kezys reminded new members that he has information

Mike Jefferson first spoke about our past President Brian McKid. He asked that members sign a sympathy card. Mike has an agenda for the upcoming National Meeting, and told us about the various items on it.

Roger mentioned there will be a total lunar eclipse the day before our next meeting. We adjourned for a break.

Our main speaker is Dr. Ralph Chou who last spoke here in 1986. His talk dealt with Solar UV radiation and its effect on

sight, with emphasis on vision at night .Roger then thanked Dr. Chou for his talk.

Board meeting in 2 weeks at the observatory. Ann Tekatch mentioned that the next HAA meeting will feature Paul Turcotte on astrphotography. Dave motioned to adjourn. Bob Botts seconded. The meeting ended at 10:21 pm.



NEIGHBOURING CENTRES

he London Centre Annual Banquet will be held at the Seven Dwarfs Restaurant, 4742 Longwoods (Wharncliffe Rd,

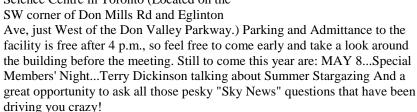
Highway 2) on the evening of Saturday May 25. Dinner is at 7:00PM, social at 6:30 PM. The speaker will be Doug Welch from McMaster University, speaking on MACHOs. You may order from a menu or eat from a great buffet. The cost is \$23 for one, \$45 for two. If anyone would like to attend, please let me know.

- Dave Clark, RASC London Centre Treasurer Tel: (519)657-6825 or (519)657-1988 102376.23@compuserve.com



riends at the Toronto Centre have invited us to their upcoming meetings. They will all be held at 7:30 p.m. in the main auditorium of the Ontario

Science Centre in Toronto (Located on the SW corner of Don Mills Rd and Eglinton



MAY 22...Regular Meeting...Dr. Ronald Butta, Dept of Physics and Astronomy, University of Alabama gives a talk on "Galactic Rings" and their origins. JUNE 5...Members' Night...All kinds of neat stuff .Slides and stories overseen by moderator, Guy Nasson. For more information, phone the Toronto Centre Info line at 416-724-STAR or WWW users can check out the updated page at: http://durham.durhamc.on.ca/ras/centre1.html



Great Food, Fun, Friendship in London Centre!!!



Minutes of April 4,1996 General Meeting.

Roger opened the meeting @ 8:17 pm. It has been an incredible month (see April Orbit).

The Journal will be gone by the end of the year to be replaced by something resembling Astronomy Canada. It was a fractious meeting at National. We will be getting Skynews for 1 yr at \$6 each(RASC). Rosemary will be retiring this year. There is a new centre, Okanogan Centre. There were 120-150 people @ observatory on March 23, it was bedlam. We got a letter from the NASA project director of "Night of the Comet", along with buttons for participants.

John Kezys stated there is membership info for any new members present, along with Orbits and Handbooks.

Librarian-3 new books at Observatory.

Recorder-placing meeting notes on floppy disk.

Colin-Orbits at front desk, give to friends. We got ~20 media interviews, 8 people showed up for"NOTC", and got onto Webchat with scientists and others.

Dave-ASP hosting "Expand Your Universe" in Santa Clara, California June 22-23,1996.Book soon.

Paul Turcotte showed slides of Comet Hyakutake from Mar.16-26.Lou Darcie had slides from his trip to Winter Star Party in Florida. We adjourned for a break.

The CCD group, Colin, John, Charles, and Hugh Gibson talked about the CCD camera and its construction. Charles showed us images from the CCD, and previewed future plans for the project.

Dave motioned to adjourn, Bob seconded. The meeting ended at 10:28 pm. Next Board meeting April 18,1996 at Observatory 8pm.

Minutes of April 18, Board Meeting

Les V.Powis Observatory. Present: Colin Haig, Les Nagy, Ray Badgerow, Charles Baetsen, Roger Hill, John Kezys, Dave Coulson. Guest: Bob Botts Roger opened the meeting at 8:15pm.

President: Not much to say. Our May speaker is Mr.Dave Franklin one of the people who designed the Canadarm. Ivan Semeniuk has confirmed for June 6. He will talk about the new planets discovered and the Canadian connection. Niagara Centre will come out Sunday afternoon to Check out Observatory. Congratulations to CCD group.

1st VP: Absent.

Treasurer: Another set of memberships, pushing 54. Bills are being paid. Talked to Willmann-Bell, need to get through. Roger asked if Wilma Stuart

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