Astro Chatter

At the time of publication, 528 extrasolar planets have been discovered. In the mean time, the Kepler satellite team has announced 1235 candidate planets. 15 of these have been confirmed. Estimates are that 80% of these candidates will turn out to be confirmed. That suggests that 976 more planets will be confirmed, more than doubling the previous count.

It's more than just stamp collecting. Of these planet candidates, 54 are at a distance from their star where liquid water might exist. Of these, 5 are near the size of Earth. Most of the discoveries to date are much larger than Earth.

The Kepler mission is currently funded for 3½ years. In order to get 3 transits of an Earth like planet that orbits a Sun like star, the mission must take more than three years. The nominal mission should give us good statistics on how many stars might harbor potentially habitable planets.

2011 WAS Officers

President: Gary M. Ross
1st VP: Jon Blum
2nd VP: Bob Berta
Secretary: Therese Oldani
Treasurer: Jonathan Kade
Publications: Stephen Uitti
Outreach: Dale Partin
Entire board: president@warrenastro.org
firstvp@warrenastro.org
secondvp@warrenastro.org
secretary@warrenastro.org
treasurer@warrenastro.org
publications@warrenastro.org
outreach@warrenastro.org
board@warrenastro.org

We step out of the comfort zone of 80% probable detections, and enter a world that is quite a bit more speculative. It's been announced that the Fermi gamma ray space telescope has been used to discover an excess of gamma radiation towards the center of the Milky Way galaxy. The idea is that if dark matter turns out to be made up of WIMPs – Weakly Interacting Massive Particles, then they might occasionally collide, and annihilate, giving off gamma ray photons. The center of the Milky Way ought to have a higher dark matter density than other places. The results suggest that dark matter particles are about 8 times the mass of a proton, about 7.3 to 9.3 Gev.

These results agree with data from the Italian DAMA and CoGeNT (Minnesota) which take place deep underground. The idea here is that dark matter particles will ignore the Earth, though most other phenomenon will be blocked. And the energies are not similar to neutrinos.

This isn't a smoking gun case. Further data could make the case much stronger. A narrowing of the mass range could allow experiment designs at Fermilab or the Large Hadron Collider to detect them. It's 26% of the Universe after all. - Stephen Uitti
The SWAP SHOP
This column is for those interested in buying, trading or selling. Ads run for six months. The month and year the ad will be removed is shown. Submit ads to Stephen Uitti, 313 389-5609 publications@warrenastro.org.


FOR SALE: Celestron Ultima 2000, an 8" Schmidt-Cass go-to scope. It's in good shape, works well, and has fine optics. Includes hard case. Asking $900. Contact Bob Zinke, 586-264-0884, email: r1d3z@yahoo.com [6-2011]

WAS Club logo wear at WAS meetings

(Photos and modeling by Jon Blum)

Diane Worth, dianewsky-night@yahoo.com or 248-980-7832 sells club logo clothing (hats, shirts, sweatshirts, jackets). Stephen Uitti brings a catalog of available items to meetings.

Astronomical Phenomena - February 2011

<table>
<thead>
<tr>
<th>Day</th>
<th>Event</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Venus 1.6°S of Moon</td>
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<tr>
<td>3</td>
<td>Neptune 4.8°S of Moon</td>
</tr>
<tr>
<td>4</td>
<td>Mars 5.7°S of Moon</td>
</tr>
<tr>
<td>4</td>
<td>NEW MOON</td>
</tr>
<tr>
<td>5</td>
<td>Mercury 6.0°S of Moon</td>
</tr>
<tr>
<td>6</td>
<td>Uranus 5.7°S of Moon</td>
</tr>
<tr>
<td>6</td>
<td>Moon at apogee</td>
</tr>
<tr>
<td>9</td>
<td>Mercury 0.3°N of Uranus</td>
</tr>
<tr>
<td>12</td>
<td>Moon furthest North (23.8°)</td>
</tr>
<tr>
<td>13</td>
<td>FIRST QUARTER</td>
</tr>
<tr>
<td>16</td>
<td>Mercury 2.0°N of Jupiter</td>
</tr>
<tr>
<td>17</td>
<td>Regulus 4.9°N of Moon</td>
</tr>
<tr>
<td>19</td>
<td>FULL MOON</td>
</tr>
<tr>
<td>19</td>
<td>Moon at perigee</td>
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<tr>
<td>21</td>
<td>Equinox</td>
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<tr>
<td>21</td>
<td>Spica 2.4°N of Moon</td>
</tr>
<tr>
<td>21</td>
<td>Uranus at conjunction</td>
</tr>
<tr>
<td>23</td>
<td>Mercury greatest elong E(19°)</td>
</tr>
<tr>
<td>24</td>
<td>Antares 3.0°S of Moon</td>
</tr>
<tr>
<td>25</td>
<td>Moon furthest South (-23.8°)</td>
</tr>
<tr>
<td>26</td>
<td>LAST QUARTER</td>
</tr>
<tr>
<td>26</td>
<td>Pluto 3.6°N of Moon</td>
</tr>
<tr>
<td>27</td>
<td>Venus 0.1°S of Neptune</td>
</tr>
<tr>
<td>30</td>
<td>Mercury stationary</td>
</tr>
<tr>
<td>31</td>
<td>Neptune 5.0°S of Moon</td>
</tr>
<tr>
<td>31</td>
<td>Venus 5.5°S of Moon</td>
</tr>
</tbody>
</table>

Oakland Astronomy Club newsletter
http://oaklandastronomy.ulmb.com/oacnews.html
Clear skies, - Bill MacIntosh

Seven Ponds Open Invitation
WAS members are invited to The Seven Ponds Astronomy Club monthly meetings. More information about upcoming meetings, maps to Seven Ponds Nature Center, etc. is available at at http://bhmich.com/sevenpondsac/. Please let me know if you might attend so that appropriate plans can be made. Any questions, please contact me.
- John Lines
Observatory Rules

1. Closing time depends on weather, etc.
2. May be closed one hour after opening time if no members arrive within the first hour.
3. Contact the 2nd VP for other arrangements, such as late arrival time. Call 586-992-0498.
4. An alternate person may be appointed to open.
5. Members may arrive before or stay after the scheduled open house time.
6. Dates are subject to change or cancellation depending on weather or staff availability.
7. Postings to the Yahoo Group and/or email no later than 2 hours before starting time in case of date change or cancellation.
8. It is best to call or email the 2nd VP at least 2 hours before the posted opening with any questions. Later emails may not be receivable.
9. Generally, only strong rain or snow will prevent the open house... the plan is to be there even if it is clouded over. Often, the weather is cloudy, but it clears up as the evening progresses.

   -Bob Berta, 2nd VP

2011 Stargate Observatory Open House
26 Feb, Mar 26, Apr 23, May 7, June 4, July 9, Aug 20, Sept 24, Oct 22, Nov 19, Dec 3

2011 WAS Meetings
Cranbrook Meetings: 1st Mondays
Feb 7, Mar 7, Apr 4, May 2, June 6, July 11

Macomb Meetings: 3rd Thursdays
Feb 17, Mar 17, Apr 21, May 19, June 16, July 21

WAS Events
26 March – Farmington Hills Dark Skies, Metro Beech, and Stargate Open House!

WAS 2010 Upcoming Presentations

<table>
<thead>
<tr>
<th>Date</th>
<th>Presenter</th>
<th>Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>7 Feb</td>
<td>Stephen Uitti</td>
<td>First Astrophotos</td>
</tr>
<tr>
<td>7 Feb</td>
<td>Larry Phipps</td>
<td>Cassini – There and Back Again</td>
</tr>
<tr>
<td>17 Feb</td>
<td>Dave Bailey</td>
<td>The Space Centrifuge</td>
</tr>
<tr>
<td>7 March</td>
<td>Stephen Uitti</td>
<td>Cool Space Mission</td>
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<tr>
<td>17 Mar</td>
<td>Jerry Kuchera</td>
<td>To Be Announced</td>
</tr>
<tr>
<td>4 April</td>
<td>Hall, Kade, Martin, Ross, Blum</td>
<td>Sci-Fi inspiration for science Debate</td>
</tr>
<tr>
<td>2 May</td>
<td>Ken Berin</td>
<td>Cassini</td>
</tr>
<tr>
<td>19 May</td>
<td>Jonathan Kade</td>
<td>Satellite Disaster</td>
</tr>
</tbody>
</table>

Update for the DbarA scout camp
The 14” Celestron, and mount arrived. Should be finished soon.

   - Bob Berta
Board Meeting 3 Jan 2011
Officers: Gary Ross, Dale Partin, Therese Oldani, Bob Berta, Gary Ross, Stephen Uitti, (speaker phone:) Jonathan Kade, Jon Blum, Guest: Ken Bertin

1st VP: All but five meetings have speakers scheduled for 2011. Started scheduling speakers for the first couple months of 2012. Our next debate will be on April 4, and the subject will be "Debate Does science fiction inspire genuine public interest in astronomy and cosmology or does it promote scientific error and confuse the general public." The topic for the annual banquet in December of 2011 will be the 50th anniversary of the WAS, and several people may give short talks about that subject.

Jonathan Kade is working on annual banquet of what topic might be of interest.

2nd VP: Open house is January 29 at Stargate, Pictures of eclipse will be shown later tonight. No further action on the floor of Stargate.

Secretary: Donation list cataloged and sent to board by email. Thank you letters to be done soon. In need of presenter of Banquet, John Marks’ address. Secretary has started a check list for board members regarding annual banquet preparation; including awards to be made ahead of time. Kade has also added that duties be drawn up for board members like: insurance to be paid, filing tax forms with state and IRS. Kade has begun this list.

Outreach: Newly appointed Outreach officer, Dale Partin, reported that March 26 has multiple events: Farmington Hills dark skies by contact is Jon Blum (attended by Gary Ross)

Metro beach event: contacts are Diane Hall and Jonathan Kade.

Open house at Stargate: contact is Bob Berta

Publications: Uitti reported WASP is out. Jonathan K. commented that it is nice having February events in the January publication. Jonathan requested that February edition include March events.

Treasurer: 2010 end of year treasurer report. See treasurers report for details. The renewal letter is ready to go. In case the by laws don’t pass, there is a plan b option to consider. Attendance of December Banquet was 54 persons.

Old business:
President read letter from insurance company for statement of values. President sees no reason to rush it back, but would like to consult with the treasurer. Ken Bertin has offered to look at the letter.

Awards: Bob is looking into the details of wording and format. Much discussion by the Board.

Gary Ross reported that the lawyer has completed 501C3 and should have it dispersed to officers by Macomb meeting. It is important to have the by-laws completed – vote planned tonight by general members in good standing at 7:30pm meeting.

New business:
Jon Blum reported that there was a Lecture requested by Dave D’Onofrio and this is to be brought before the board to reconsider his choice of topic around Intelligent Design and Cosmology. Jon Blum has declined his request initially. Discussion was made by officers.

Berta made a motion: Do we allow Dave to do his talk on Intelligent Design and Cosmology. Motion was Seconded by Stephen U. President stated that 1st VP's initial reaction was entirely justified. If mistakes were made, then it is time to correct them now. The Board discussed. Board was polled individually. One yes, five no, one abstention. The motion failed. More discussion was shared among officers after the vote.

Cranbrook General Meeting 3 Jan 2011
President announced that a vote was to be made at the beginning of tonight’s general meeting on By-Laws changes. Members were sent all the changes by email before tonight’s meeting.

After 13 people paid dues to be in good standing for vote to be taken on by-laws changes, Dale Partin gave a detail of these 12 changes.

Each change was described and voted on separately. All by-law changes were unanimously
carried. See updated website for current by-laws. Counting paid members today. Present in good standing 26 voting members at meeting tonight. 2 members Jonathan Kade and Jon Blum by proxy. Total voting members 28. A list of the substantial revisions:

Honorary life membership has been revised so that the board can award it by unanimous vote. Previously, the board recommended it and the entirety of the membership voted on it. This is not how the last two honorary lifetime memberships were awarded.

College and Junior/Student membership have been combined into a single category, student membership. The board changed the dues for College and Junior Membership to be the same some years ago.

Expulsion of members has been changed so that a supermajority (five out of the seven) of the entire board can expel a member. Here is the old procedure: "Any member may be expelled from membership by the Board of Directors when in the judgment of the Board of Directors the interest of the Corporation will be served thereby. ... The Board of Directors shall then pass final decision upon the matter and upon a recommendation of simple majority of the Board of Directors, and provided such expulsion is approved by a majority of votes cast by the voting members in a regular or special meeting, the member's name will then be dropped from the membership roll."

The language seemed to be contradictory (the board can remove, but members must vote?). We have not had need to make use of this in ten years, but thought that resolving the contradiction was important.

The annual meeting has been moved from the October Macomb meeting to the November Cranbrook meeting. This is due to the significantly greater attendance at Cranbrook and the frequent collisions with star parties in October. The "annual" board meeting has been moved to that meeting as well. We also removed references to specific venues.

The Waiver of Notice clause has been removed, as nobody understands what it means. It seemed to mean that if officers missed a board meeting, they couldn't claim that decisions made there were invalid due to their absence. The sense of the board on this topic is, "Well, duh."

The voting procedure has been amended to make voting for uncontested positions by acclaim (the way all W.A.S. elections I have seen are conducted) a recognized election process.

Two new officer positions have been added: Outreach Director and Publications Director. They are not new positions and date back to the 70s at least, but have never been first-class offices.

The first and second vice president positions have been divided into separate articles, and their duties enumerated. Before, the language was extremely vague.

Officers can now be removed by a majority vote of the board rather than by the majority of the board AND a majority of the membership. This is how it was done the last time an officer was removed.

Mid-term vacancies in office are now filled by the board, rather than the more complicated series of rules in the current bylaws. This is how a mid-term vacancy was filled last time.

The fiscal year of the corporation has been changed to the calendar year to match the current membership year.

Finally, and most importantly, properly announced amendments to by-laws can now be approved by a majority of the membership at a meeting, instead of the majority of the total membership. Under the old system, changes to the by-laws are nearly impossible, since it is rare to have near half the membership at a meeting. http://www.warrenastro.org/was/doc/WAS-Bylaws-Revised-20110103.pdf See for By Laws as of Jan 3, 2011.

Officer's reports were similar to board meeting. Secretary asked president to hand out awards that were not collected at the December banquet (
Blain McCollough to Sai Rajagopalan, and Larry Kalinowski award to Lee Hartwell.

**Discussion group:** Gathen reported that the meeting 4th of December was a topic on “Living on the Moon”.

**Solar:** 3 spots on sun right now, informal meetings upcoming to be scheduled for the summer.

**Star Party:** Spring Cadillac scheduled for late May.

**In the News:** Ken: Solar Eclipse tomorrow. Gave short details of cyclical events around solar eclipse.

**Mike ODowd:** Short clip called *The Known Universe*, from American Museum of Natural History.

**Short Movie Trailer** by Larry Phipps for upcoming February 7th at Cranbrook presentation on The Cassini Mission, There and back again.

**Short Talk Phil Martin:** Your GPS Gadget: How it actually Works with the GPS Satellites. A first calculation of the corrections that must be made to the clocks in all the GPS satellites in order for them to work at all can be made using just a hand calculator, and some well known values, like the mass of the earth, and Newton’s gravitational constant.

**President** introduced visitors and new members.

**Main Speaker presentation:** Jim Foerch of the Grand Rapids Amateur Astronomical Association with a topic: *A Selected Historical Review of the Cosmological Distance Ladder*. Astronomers to be discussed included Eratosthenes, Galileo, Copernicus, Kepler, Bradley, Bessel, Leavitt, et al.

Mr. Foersch has forwarded his Selected Bibliography from tonight’s presentation.


George Biddell Airy, Astronomer Royal, 1858 abstracted in the Annual Report of the Board of Regents of the Smithsonian Institution. 1860. “On the means which will be available for correcting the measure of the sun’s distance in the next twenty five years.”


35 Attended - *Therese Oldani*

**Macomb Meeting 20 Jan, 2011**

Gary Ross announced that WAS has received a Certificate of Appreciation from NASA, "to the Warren Astronomical Society for its valuable contributions to its community in the areas of science, technology, education and inspiration," dated December 2010.

The next open house will be on Saturday, January 29.

The Blaine McCullough Award was presented to Sai Rajagopalan for his work in radio astronomy.

The Larry Kalinowski Award was presented to Lee Hartwell for his many presentations to scout groups.

It was noted that the February open house will be on February 26. On March 26 will be a "Super Saturday" with three events. We will have an open house, plus there will be a Dark Sky Event in Farmington Hills and a Sidewalk Astronomy event at Metro Beach. The Ford Area Astronomy Club will have their annual Swap Meet on March 12. Details are on their club web site.

WAS membership renewal letters will be sent out soon. Work is still being done toward getting a 501c3 status for the club.

The dBarA Boy Scout camp will likely have its new 14 inch Celestron telescope operating in February.

Mike O’Dowd showed a short movie, "The Known Universe".

The main presentation was by Gary Ross, entitled, *The World of John Philoponos*.

The meeting adjourned at 9:45 pm. About 30 people attended. - *Dale Partin*
Treasurer's Report

MEMBERSHIP
We had three new members in January, and have fifteen renewals.

NONPROFIT STATUS
I’ve talked with our lawyer friend about the application, but did not accomplish anything on this in January. February is looking less catastrophic from a personal perspective.

RENEWAL LETTERS
I sent out renewal letters to all 150 recent WAS members at the end of January. Mine already arrived; everyone should get one soon. Total cost was $92.28.

INCOME AND EXPENDITURES
We took in $581.54 and spent $327.26. We have $5388.41 in the bank account and $165.35 in cash.

Detailed I&E
New memberships: $89
Renewals: $408
Donations: $15.54 (Cranbrook 50-50), $69 (Macomb 50+50, snacks)
Award plaques: ($84.54)
Banquet speaker travel reimbursement: ($54.40)
General reimbursements: ($61.09)

- Jonathan Kade

Maksutov
Dmitri Dmitriyevich Maksutov was born in 1897 in Ukraine, at the time, part of the Russian Empire. He became interested in astronomy in early childhood, and constructed his first telescope (a 180 mm reflector) when he was 12. He read publications by optician Alexander Andreevich Chikin (1865–1924), who became his teacher. He constructed a much better 210 mm reflector and began serious astronomical observation. At 15, he was accepted as a member of the Russian Astronomical Society. Between 1921 and 1930 he worked at the Physics Institute of the University of Odessa in the field of astronomical optics.

In 1930 Maksutov established the Laboratory of Astronomical Optics at the State Optical Institute of Leningrad and led it until 1952. This laboratory was one of the leading astronomical research groups in the USSR. While there he published a paper - Aberration-free Reflective Surfaces and Systems and New Methods of Testing Them (1932). In it, he analyzed aplanatic double mirror systems and introduced the compensating method, which he proposed as early as 1924. This became the main control method of mirror study along with the shadow method. In 1944 he became a professor as a result of his famous paper, and from 1946 - a Corresponding Member of the USSR Academy of Sciences. From 1952 he worked in Pulkovo Observatory. Maksutov died in Leningrad (now St. Petersburg) in 1964.

Maksutov's most well known contribution in the field of optics was made in 1941, when he invented the Maksutov telescope (he might have seen it coming). Like the Schmidt telescope, the Maksutov corrects for spherical aberration by placing a corrector lens in front of the primary mirror. However, where the Schmidt uses an aspheric corrector at the entrance pupil, Maksutov's telescope uses a deeply curved full diameter negative meniscus lens (a "meniscus corrector shell"). Dmitri published the design in 1944 in a paper titled New catadioptric Meniscus Systems. This method was adopted not only by his own laboratory for many of the most important observatories in the Soviet Union, but also internationally. Several commercial telescope-making companies produce Maksutovs, including Celestron, Meade, and Questar.

He created many objective lenses, mirrors, and prisms of various sizes and purposes. He also created a photo-gastrograph (for photographing the stomach), a needle-microscope, shadow instruments for aerodynamic tubes, telescopic spectacles, & other instruments.