

The Shoreline Observer



*Newsletter for the
Shoreline Amateur Astronomical Association*

President- Peter Burkey

Vice President- Steve Tuls

Secretary/Treasurer- Mark Logsdon

Robert Wade, Editor

January 1992

January Meeting

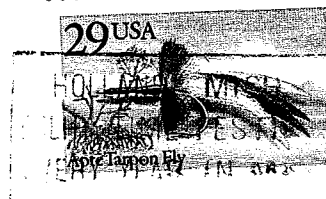
The January meeting of the Shoreline Amateur Astronomical Association will be held on Thursday, January 16th, beginning promptly at 7:00 PM in the West Ottawa Middle School Planetarium in Holland, Michigan. The agenda will be as follows:

- | | |
|-----------|--|
| 7:00-7:15 | Refreshments and socializing. |
| 7:15-7:30 | The January Night Sky Tour by Sandy Plakke. |
| 7:30-8:30 | Blackout in Baja will be presented by accomplished Muskegon astrophotographer Bill DeVette. Come see the 1991 eclipse in the comfort of your planetarium. |

January Board Meeting

Peter Burkey called the meeting to order at 7:13 pm on January 6th, 1992. The three upcoming SA³ meetings were discussed. January 16th will be devoted to Bill DeVette's eclipse slides. February 20th will include an astronomy related video with a constellation tour given by Mark Logsdon. The March 19th meeting will feature Peter Chan who will give a slide show on the aurora borealis.

3882 62nd Street
Holland, Michigan 49423



A public star party will be hosted by our club on Monday, February 10th, at the corner of Central and 8th street in downtown Holland. Meet at 7:00 pm in the small park at the southwest corner of the intersection.

The January/February star parties for club members and friends will be held Friday, January 31st at Bob Wade's, and Friday, February 6th at Mark Logsdon's.

Treasurer's report: \$303.39. Meeting adjourned 8:00 pm.

Submitted by Mark Logsdon.

APPULSES FOR 1992

This article describes some of the best "appulses" between Minor Planets and Deep Sky Objects (galaxies, star clusters, nebula, etc) that will be visible during the year 1992. Loosely put, an "appulse" is simply when an object of our solar system can be seen in close proximity to some other very distant, background object. For a Minor Planet passing near a galaxy, this would be termed an appulse between the two.

Some of these appulses can simply be viewed visually, through the telescope eyepiece - although picking out the Minor Planet may require a detailed chart or photograph of the object. As an alternative, a sketch can be made at the eyepiece and compared to the same field an hour or so later. Any object that has moved is most likely the Minor Planet.

The real intent of this list however, is to aid the astrophotographer in obtaining some unique, one-of-a-kind photos. If you are planning to get a good shot of M33 for instance, why not plan to take the photo at a time when a Minor Planet would be captured in the same frame? Depending on the effective focal length of your optical system, a long exposure may show the Minor Planet as a

short streak on the same film frame - making for easy identification of the MP, and adding a "uniqueness" to the shot. This list, and a little luck may lead to such opportunities.

This listing was originally compiled for my own use, and as an ongoing project for Sky & Telescope magazine. It is distributed in the hope that others might find this information of interest - and yes, as a slight promo for my program.

I would be interested in hearing from anyone who finds this information of interest. If you should capture a photo of any of these events, I (and I'm sure Sky & Tel) would be very interested in a copy.

1992 BEST APPULSE CALCULATIONS

The following is the output from my program called APPULSE, detailing some of the best appulses for 1992.

Very briefly, the columns of data are listed as follows:

* DATE	Under this column is the date of the appulse
* "Minor Planet name"	Under this column is the position of the above listed minor planet for the date to the left.
* MOTION	Two columns appear under this heading. The first is the minor planet's motion in arc seconds per minute, the second lists to what direction (in position angle) the MP is headed.
* SEPARATION	Again two columns. The first is the separation between the MP and DSO (Deep Sky Object) in degrees. The second is the same separation in arc minutes.
* DEEP SKY OBJECT	The position of the DSO in HRs MIN DEG MIN
* NGC	The NGC number of the DSO
* MAG	The magnitude of the DSO
* TYP	The type of object the DSO is.
* CON	The 3 letter abbreviation of the Constellation of the DSO
* SIZE	Size of the DSO
* NOTES	Messier designation, etc.

BEST APPULSES OF 1992

Date	MP Mag	MP#	Sep	DSO	Moon	Notes	Darktime	MoonR&S	MoonPos
JANUARY 3344									
4	11.9	145	3.90	3344	> 0.8	GX LMI D across	23:15-10:48	12:21-21:22	
12	14.9	767	7.31	M 35	< 39.0				
16	14.2	1021	3.93	M 84	< 79.5				
23	14.2	1074	11.85	M 35	> 86.2				
23	15.7	1417	1.40	M 35	> 86.2				
FEBRUARY 2420, 2392, M45									
1	14.9	1903	0.43	3506	> 6.8	GX LEO			
4	16.2	3317	2.28	2237		New Rossette			
6	13.1	376	2.35	2420	< 4.5	OC GEM D	23:52-10:31	12:41p-00:24	2241-0324
10	9.5	44	7.56	2392	< 32.8	PN GEM D	23:56-10:27	14:10p-04:43	0145+1603
12	14.8	243	4.18	1746	< 53.6	OC TAU			
22	13.7	50	5.56	1647	> 82.2	OC TAU			
24	13.5	144	3.76	M 20	> 63.4				
26	14.0	416	-3.00	M 45	> 43.6	Pleiades D	00:17-10:04	07:29-16:13	1650-2434
MARCH 2266, 4665, M104, M1, M35									
5	15.1	1074	2.22	M 35	< 0.4		00:27-0950	11:08p-23:18p	2314+0019
5	12.2	110	3.42	4665	< 0.4	GX VIR D across	00:27-0950	11:08p-23:18p	2314+0019
7	12.3	21	11.51	M 21	< 6.0				
16	12.4	26	2.45	M 28	< 89.3				
22	13.3	273	5.55	M 58	> 86.9				
25	13.3	273	9.01	M 89	> 60.8				
27	14.8	663	0.83	2022	> 41.7	PN ORI			
28	14.4	573	1.99	M 104	> 32.5	GX VIR D	00:59-09:06	08:00-18:01	1959-1836
28	13.3	141	7.08	2266	> 32.5	OC GEM D	00:59-09:06	08:00-18:01	1959-1836
29	15.7	1189	1.30	M 1	> 24.1	PN TAU D	01:01-09:03	08:27-19:03	2046-1459
APRIL M104, M100									
4	12.1	216	14.23	M 104	< 0.8	GX VIR D	01:10-08:51	10:19p-00:23	0121+1338
6	12.0	110	1.80	4273	< 8.5	GX in group D	01:13-08:46	11:19p-02:41	0307+2108
9	13.5	273	11.20	M 100	< 34.3	GX D	01:18-08:40	13:44p-05:43	0604+2340
19	15.7	2391	0.50	5339	> 96.1				
MAY 3628									
1	13.1	488	3.86	6568	> 3.6	OC SAG			
7	14.3	73	7.06	M 44	< 21.4	OC CNC D	02:09-07:40	12:43p-04:27	0650+2201
8	11.1	44	4.33	M 44	< 31.5	OC CNC Moon nr D	02:11-07:38	13:55p-05:07	0749+1853
14	14.3	377	6.18	M 67	< 91.7				
16	15.7	3642	4.62	M 100	< 99.4	GX Moon up all nite D	02:26-07:22	23:41-09:04	1455-2025
21	12.8	488	3.95	M 21	> 82.2		02:36-07:13	03:58-13:36	1926-2013
28	7.3	4	3.27	3628	> 19.6	GX LEO D	02:48-07:02	06:47-20:58	0046+1029
JUNE M7, M80									
7	14.5	1232	0.96	6716	< 40.2	OC SAG			
9	15.4	2953	3.55	M 20	< 62.8				
19	10.3	192	4.75	M 7	> 87.0	Moon rs end twilight D	03:12-06:45	02:56-13:28	2047-1425
20	11.6	233	4.66	6639	> 80.0	OC SCT	03:12-06:45	03:20-14:30	2132-1013
22	10.2	192	4.71	6444	> 63.0	OC SCO	03:13-06:45	04:03-16:32	
23	13.6	109	3.99	M 7	> 53.5	OC SCO D	03:13-06:45	04:24-17:35	2344+0401
27	13.8	1303	1.90	M 80	> 15.8	GC SCO D	03:12-06:48	06:22-22:05	0302+2052
JULY M8, M45									
2	11.0	14	9.22	M 66	< 3.3	setting @ end twil D	03:09-06:52	10:34p-01:39	0811+1718
3	15.6	1975	5.70	M 16	< 9.0				
6	12.7	261	6.36	M 75	< 37.7				
7	12.6	49	2.77	6530	< 48.8	OC part of M8 D	03:04-06:58	16:59p-04:02	1242-1007
8	12.6	49	5.40	M 8	< 59.8	BN SAG D	03:03-07:00	18:11p-04:31	1334-1454
11	13.6	313	8.55	M 61	< 86.7				
12	13.0	182	8.25	M 20	< 92.8				
12	10.9	45	11.73	6822	< 92.8	GX SAG			
20	7.8	4	10.53	M 61	> 77.3	No dark sky	02:46-07:19	02:29-15:24	2331+0233
31	13.9	441	13.81	M 45	< 2.3	Fair amt up @ dawn	02:25-07:40	12:07-01:10f	0943+0914
AUGUST									
4	14.3	1543	2.03	6469	< 34.4	OC SAG	02:17-07:47	15:58p-02:33	1320-1332
17	14.7	3682	14.95	M 33	> 88.7		01:49-08:11	00:57-14:18	0004+0600
17	15.3	1819	2.16	M 5	> 88.7		01:49-08:11	00:57-14:18	0004+0600
18	13.5	351	12.21	7293	> 81.9	PN AQR			
SEPTEMBER M33, 2420, NGC 2903									
8	11.5	9	14.83	M 80	< 85.6				
8	13.4	25	5.08	2261	< 85.6	BN MON			
17	14.7	576	5.48	M 4	> 78.3		00:42-09:00	00:55-16:27	0307+2035
18	15.8	1441	5.25	M 15	> 69.2		00:40-09:01	01:38-17:28	0401+2240
18	13.3	308	6.55	M 9	> 69.2		00:40-09:01	01:38-17:28	0401+2240

20	13.1	88	2.83	2420	> 48.3	OC GEM Moon near	00:35-09:04	03:29-19:13	0558+2308
22	14.1	1547	1.19	M 33	> 26.5	Well up @ Moonrises D	00:31-09:07	05:52-20:31	0756+1305
24	15.3	899	4.15	M 16	> 8.9				
26	15.1	370	6.00	M 21		New			
27	14.1	481	6.31	2903	< 0.6	GX LEO Low E @ dawn D	00:21-09:13	11:06p-22:30p	1236-0906
28	13.2	198	9.75	2420	< 3.6	OC GEM D	00:19-09:14	13:40p-23:37p	1332-1413

OCTOBER M74, M33

2	13.5	246	3.93	6631	< 34.5	OC SCT			
13	13.5	94	12.58	2903	> 98.3	GX LEO			
18	11.5	89	8.11	6520	> 63.1	OC SAG Set @ twil.			
19	13.9	1317	1.75	1605	> 52.1	OC PER			
20	11.9	169	12.96	M 74	> 40.8	GX PSC D	23:41-09:42	04:53-19:02	0836+1454
26	13.4	3682	18.30	M 33		New GX TRI D	23:32-09:49	12:29-22:09	1404-1640
31	13.8	352	10.96	M 73	< 27.8				

NOVEMBER M45, M77

2	13.2	314	7.54	M 77	< 46.5	Moon set -11pm D	23:23-09:57	17:35p-03:45	2028-1525
5	12.7	152	9.00	M 45	< 73.8	Pleiades D	23:20-10:01	18:49p-06:48	2243-0238
4	16.1	724	3.93	2261	< 65.2	BN MON			
11	14.7	388	3.36	M 95	> 99.6				
11	15.4	697	0.80	3032	> 99.6	GX LEO			
14	16.7	3049	0.35	488	> 85.5	GX PSC			
15	15.3	507	3.01	3521	> 76.9	GX LEO			
19	11.4	53	0.43	1663	> 33.1	OC ORI	23:08-10:17	06:26-18:28	1104+0022
24	16.6	1770	3.90	2903		New GX LEO			
25	13.8	1424	7.63	M 45	< 0.5	Pleiades D	23:05-10:23	13:25-22:26	1635-2301
28	14.0	210	-5.00	2903	< 13.6	GX LEO D	23:04-10:26	14:58p-00:28	1921-1940

DECEMBER 2420

4	7.9	3	4.76	Do 23	< 66.3	OC MON			
7	14.4	580	6.10	2420	< 90.0	OC GEM			
9	14.7	274	16.93	M 1	< 98.8				
11	10.9	196	5.80	1746	> 98.7	OC TAU			
12	13.1	951	2.85	M 1	> 94.9				
15	13.5	3578	3.63	2420	> 70.2	OC GEM D	23:04-10:41	03:03-16:06	0959+0704
16	17.0	3155	2.65	M 66	> 59.2		23:04-10:41	04:17-16:33	1052+0134
16	15.1	599	-2.00	M 87	> 59.2	GX VIR D	23:04-10:41	04:17-16:33	1052+0134
23	15.5	2563	9.98	M 1	> 1.1				
30	15.2	2938	8.93	2264	< 30.3	OC MON			

Note:

- * Separations listed in arc minutes at 0 hr UT for dates listed. In nearly all cases, the minor planet would be even closer at some time prior or after the 0 hr UT time listed.
- * Moon phases - <=waxing, >=waning. Following number is percent illuminated.
- * "D" in notes column indicates a drawing is submitted of the appulse (to Sky&Tel).
- * Darktime is end of astronomical twilight to beginning of astronomical twilight for latitude 44 degrees north, longitude 74 degrees west (in UT).
- * Moonrise-Moonset is for latitude 44 degrees north, longitude 74 degrees west. "p" is preceding date (UT), "f" is following date (UT).
- * Moon's Position - first two numbers RA Hr, next two RA Min, next two Dec degrees, next two Dec minutes. Listed for 0hr UT.
- * Appulse search originally done on all minor planets listed in 1991 Ephemerides of Minor Planets.
- * Objects listed after each month represent best appulse that month - listed in order of importance.
- * Notice: Although the utmost care was exercised in finding these appulses, and in preparing this tabulation, errors are possible. It is suggested that any appulse - esp any for publication - be checked. In all cases these appulses were double, and in many cases, triple checked by independent means (separate programs, separate sources of orbital elements, etc).

This is a printout from a computer program I have written called APPULSE. The program is available in two versions - a Demo/Public Domain version (available from me for \$2) and a Registered version (\$10ppd from me). This list is output from a Registered version (Registered versions have more options, print out more information, etc). In any case, I hope any serious amateur astronomer finds these predictions of interest.

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