



Bob Bunge made this sketch, his first for Mars's 2003 apparition, on the morning of April 13, 2003.

- Light Green (W56) enhance the polar ice caps;
- Blue (W80A,82A) enhance polar caps and light colored clouds.
- **Try digital imaging.** Inexpensive webcams and digital point-and-shoot cameras work very well for eyepiece projection and allow image processing to tease out surface detail.
- **Contribute to science.** The Association of Lunar and Planetary Observers (ALPO) conducts the International Mars Watch to collect amateur sketches and images of Mars in the attempt to build a collection of daily Mars images.

Mars resources

There are several books and web sites available that cover planetary observing techniques, provide ephemeris software, and facilitate communications between observers. Some of these are:

Books

- Dobbins, Thomas, et al., *Observing and Photographing the Solar System* (Richmond, VA: Willmann-Bell, Inc., 1992)
- Jeffrey D. Beish and Charles F. Capen, *Mars Observer's Handbook* (Washington, DC: The Astronomical League)

Web sites

- The Astronomical League (www.astroleague.org/marswatch) offers observing guides and on-line resources
- The Association of Lunar and Planetary Observers-Mars Section (www.lpl

Mars ephemeris

This table gives the rise, transit, and set times (local to Washington, DC) for Mars for every Saturday until the end of 2003. It also shows the Earth-Mars distance, Mars's apparent diameter, and its transit altitude.

Date	Apparent size (arcsec)	Mars-Earth distance (AU)	Rise time	Transit time	Set time	Transit altitude (degrees)
5/3/2003	9.6	0.9734	2:12	7:06	12:00	30.85
5/10/2003	10.2	0.9175	1:59	6:55	11:52	31.68
5/17/2003	10.8	0.8633	1:44	6:44	11:44	32.53
5/24/2003	11.5	0.8108	1:29	6:32	11:35	33.42
5/31/2003	12.3	0.76	1:13	6:19	11:26	34.28
6/7/2003	13.2	0.7112	0:56	6:06	11:15	35.12
6/14/2003	14.1	0.6645	0:39	5:51	11:03	35.88
6/21/2003	15.1	0.62	0:21	5:35	10:50	36.58
6/28/2003	16.2	0.5779	0:02	5:18	10:35	37.15
7/5/2003	17.4	0.5384	23:39	5:00	10:18	37.58
7/12/2003	18.6	0.502	23:18	4:39	9:58	37.83
7/19/2003	20	0.469	22:55	4:17	9:36	37.90
7/26/2003	21.3	0.4398	22:31	3:52	9:11	37.75
8/2/2003	22.6	0.415	22:05	3:25	8:42	37.40
8/9/2003	23.7	0.3954	21:37	2:56	8:11	36.88
8/16/2003	24.5	0.3815	21:07	2:24	7:37	36.25
8/23/2003	25	0.374	20:35	1:50	7:01	35.58
8/30/2003	25.1	0.3732	20:02	1:15	6:24	35.02
9/6/2003	24.7	0.3795	19:29	0:40	5:48	34.62
9/13/2003	23.9	0.3924	18:56	0:07	5:13	34.45
9/20/2003	22.7	0.4116	18:24	23:31	4:42	34.62
9/27/2003	21.4	0.4367	17:53	23:01	4:14	35.03
10/4/2003	20	0.4668	17:24	22:35	3:49	35.68
10/11/2003	18.7	0.5015	16:56	22:10	3:27	36.57
10/18/2003	17.3	0.5401	16:30	21:48	3:09	37.62
10/25/2003	16.1	0.5822	16:06	21:28	2:52	38.82
11/1/2003	14.8	0.6342	14:42	20:09	1:38	40.15
11/8/2003	13.7	0.6825	14:20	19:51	1:25	41.58
11/15/2003	12.8	0.7333	13:58	19:35	1:14	43.13
11/22/2003	11.9	0.7863	13:38	19:20	1:04	44.75
11/29/2003	11.1	0.8413	13:18	19:05	0:54	46.43
12/6/2003	10.4	0.8981	12:58	18:51	0:46	48.17
12/13/2003	9.8	0.9564	12:39	18:38	0:38	49.95
12/20/2003	9.2	1.0162	12:20	18:25	0:31	51.75
12/27/2003	8.7	1.0773	12:01	18:12	0:24	53.57

arizona.edu/~rhill/alpo/mars.html) has many Mars resources

- The ALPO Mars Section also has a list serve on Yahoo!Groups at groups.yahoo.com/group/Mars-ALPO/.
- Simulated Mars images can be generated by the JPL Solar System Simulator at space.jpl.nasa.gov.
- "Mars Previewer 2" is free software for MS Windows that will display a simulated image of Mars and identify important albedo features. It can be

downloaded from www.astronomysight.com/as/start/books.html. ★