

PRIME FOCUS

Tri-Valley Stargazers

February 2002



Meeting Info:

What

Space Art at the Dawn of the Space Age

Who

Dave Rodrigues

When

February 15, 2002
Conversation at 7:00 pm
Lecture at 7:30 pm

Where

Unitarian Universalist
Church in Livermore
1893 N. Vasco Road

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Saturn Viewed from Titan
by Chesley Bonestell, from *The Conquest of Space*, 1949.
Chesley painted quite a few views of Saturn from Titan.

February Meeting

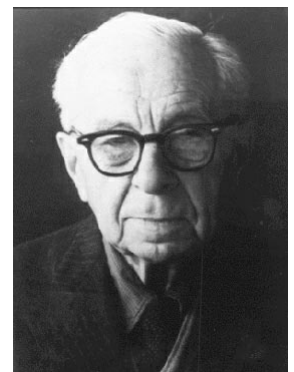
Space Art at the Dawn of the Space Age:
The Art of Chesley Bonestell, Fred Freedman, and Rolf Klep

Dave Rodrigues

Shortly after World War II, several events came together to make space travel seem a real possibility. The development of rockets, atomic power, large government projects, technological advancement due to the war, and economic growth made possible by the peace conjoined to make dreamers think seriously about space flight. In order to convince the general public, and decision makers in particular, that such dreams were on the edge of tangibility, space scientists such as Werner Von Braun, Willy Ley, and Fred Whipple wrote articles and books that used real science and engineering.

But hard-headed calculations were not enough. To captivate, inspire, and seduce, they employed a remarkable group of space artists: Chesley Bonestell, Fred Freeman, and Rolf Klep.

Preeminent among those was Chesley Bonestell. Raised in the Bay Area, when he was ten he was inspired by a view of Saturn through the 36-inch refractor at Lick Observatory (a good lesson for those of us who give views of the planets to kids!). Trained as a professional artist, he then went on to “render”



Chesley Bonestell

News & Notes

architectural drawings into pictures including skyscrapers in New York City, the Golden Gate Bridge, and the 1938 San Francisco Exposition. He then worked as a matte artist in films including *Citizen Kane* and George Pal's *Destination Moon*. His breathtaking views of the Earth from space, space ships under construction, astronauts exploring the Moon and Mars, and views of other planets from their moons are unforgettable! The San Francisco Bay Area is often a background for his portrayals of space ships orbiting the Earth.



Assembling the Ships for the Mars Expedition. C. Bonestell, 1956

These beautiful works of art inspired generations of astronauts, engineers, astronomers and just regular folks. They shaped and encouraged the development of the U.S. space program. Their remarkably prophetic visions of the future illuminate our understanding of the early history of space flight.

Indeed, even as you

read this article, events are happening overhead (the construction of a space station by a winged space plane) that have their roots in a series of articles in *Colliers* magazine authored by Werner Von Braun and illustrated by Chesley Bonestell.

In this program, I will show slides of many of these stunning works, point out and explain much of the incredible detail that might normally be missed, and discuss how they influenced the history of spaceflight. This program will give you much insight into these works.

Dues Are Really, Really, Really Due!!

Our official dues collection date was last month, but it's not too late to get your dues in for year 2002.

If you wish to get a discounted subscription to *Astronomy* (\$29) and/or *Sky & Telescope* (\$29.95) magazine, you will need to get your subscription in by this month as the discount subscription offer ends this month. You can find the renewal/application form on the last page of this newsletter.

While you're filling out the form, please take the time to fill out the questionnaire as well. We really do read them. Really.

Welcome New Members

TVS would like to welcome four new members that have joined us within the last month: **Bradley Esser, Judi & Hal Coupar, Joe Paulsen,** and **Rich Campbell.** Please say 'hello' to our new members at the February meeting.

2002 TVS Meeting Dates

For the next two years, our monthly lecture meetings will be on the **third** Friday of the month, with the Board meeting on the Monday following the lecture meeting. Here are the dates for 2002:

Lecture Meeting	Board Meeting	Prime Focus Deadline
Feb. 15	Feb. 18	Feb. 23
Mar. 15	Mar. 18	Mar. 23
Apr. 19	Apr. 22	Apr. 27
May 17	May 20	May 25
June 21	June 24	June 29
July 19	July 22	July 27
Aug. 16	Aug. 19	Aug. 24
Sep. 20	Sep. 23	Sep. 28
Oct. 18	Oct. 21	Oct. 26
Nov. 15	Nov. 18	Nov. 23
Dec. 20	Dec. 16	Dec. 28

Money Matters

At the January Board meeting, Treasurer **Mike Anderson** reported the current balances (as of January 21, 2002) of our various accounts:

Checking	\$4,086.16	
CD #1	\$3,836.71	matures 02/17/02
CD #3	\$2,367.78	matures 02/27/02
CD #4	\$2,024.06	matures 04/16/02

The checking account includes monies for *Sky & Telescope* and *Astronomy* magazine subscriptions. When the subscriptions are mailed in, the checking account balance will be \$2,874.36.

Newsletter header image: A storm on Saturn appears as a white arrowhead-shaped feature near the planet's equator. The storm is generated by an upwelling of warmer air, similar to a terrestrial thunderhead. The east-west extent of this storm is equal to the diameter of the Earth. This image was taken on December 1, 1994 with Hubble's Wide Field Planetary Camera 2 (WFPC2). The picture is a composite of images taken through different color filters to create a "true-color" rendition of the planet. Photo: *Hubble Space Telescope*

Loaner Scope Winter Special Continues

TVS has a variety of telescopes available for TVS members to rent. Our winter special allows you to rent any scope in the Loaner Scope program for a month and receive another rental month for free. See our Loaner Scope manager **John Swenson** for more info (jswenson1@attbi.com) or come to the February meeting to check out a scope. All you need to rent a scope is to supply a \$50 deposit check (which will be returned to you if you return the scope in the same condition as you received it) and a \$15 rental payment (\$5 for students).

Upcoming Science Fair

For the past several years TVS has been invited to participate in the Pleasanton Unified School District's Science Fun Fair. The Science Fair is for Pleasanton students in grades K-5. This year the Science Fair takes place on Thursday, February 21 from 6:00-9:00 p.m. at the Pleasanton Fairgrounds. TVS needs volunteers to help man the table indoors and provide scopes for viewing outdoors (weather permitting, of course).

We'd like to have at least two people at the table inside answering questions that the public might have regarding astronomy and the club. We'd like to have as many people with their scopes outside to provide celestial views to the one to two thousand people that will be there. If you don't want to bring your own scope, TVS can provide you with one of the club's scopes. We will only get a couple of parking passes, so carpooling may be in order for the evening. If you're interested in participating, please contact Debbie Dyke at 925-461-3003 or ddfam@pacbell.net.

Last Chance for Observing Book/Calendar

Treasurer **Mike Anderson** has 4 copies of the 2002 *RASC Observer's Handbook* and 1 copy of *RASC Observer's Calendar 2002* left for sale. The *Handbook* can be purchased for \$15, a big savings from the \$22 retail price. The calendar is yours for just \$10. You can pick up one of the remaining copies at the February meeting.

Sign Up for TVS's E-mail Discussion Group

by Chuck Grant

Yahoo Groups (formerly eGroups) runs a large number of free e-mail discussion groups which also include other features such as chat, calendar, image and file sharing, customizable member home "portal" pages (myyahoo.com) and a free web access only e-mail account (yourID@yahoo.com).

The TVS e-mail group is for TVS members only. It is a membership benefit.

Method 1:

To sign up to get all the features, go to:
<http://groups.yahoo.com/group/trivalleystargazers/join>

If you already have a Yahoo ID you can sign in with it here. If you do not have a Yahoo ID you can click the link to sign up for one (free). You don't have to answer the personal questions accurately. I, for example, am listed as the 145 year old CEO of an aerospace corporation, and have elected not to receive any e-mail offers.

Be sure to list the e-mail addresses where you will read and post to the list in the alternate e-mail addresses section (unless you want to only access the group through your Yahoo e-mail account). Be sure to set one of these

continued next page

Officers

President:

Chuck Grant
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925-422-7278

Vice-President:

Gary Steinhour
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Treasurer:

Mike Anderson
andersonm@prodigy.net

Secretary:

Maggie Halberg
925-736-8627

Board of Directors

Alane Alchorn, Jim Alves, Dave Anderson, Dennis Beckley, Paul Caswell, Rich Combs, Debbie

Dyke, Gert Gottschalk, Kathleen Kelley, Signe McIntire, Dave Rodrigues, Frank Rogue, Mike Rushford, Debbie Scherrer, Al Stern, John Swenson, Norm Thomas, Phil Waide

Volunteer Positions

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Program Director: unfilled

Loaner Scope Manager:

John Swenson
johnswenson1@attbi.com

Refreshments:

Debbie Dyke

Webmaster:

Chuck Grant

Observatory Director/

Key Master:

Chuck Grant

School Star Party Chair:

Rich Green (unofficially)

Public Star Party Chair:

Rich Green (unofficially)

Historians:

Paul Caswell & Debbie Dyke

Addresses

Mailing:

Tri-Valley Stargazers
P.O. Box 2476
Livermore, CA 94551

Lecture Meeting:

Unitarian Universalist Church
1893 N. Vasco Road, Livermore

Board Meeting:

Round Table Pizza
1024 E. Stanley Blvd., Livermore

Web & E-mail

www.trivalleystargazers.org

tvst@trivalleystargazers.org

Eyes on the Skies

Eyes on the Skies is a robotic solar telescope run by Mike Rushford (rushford@eyes-on-the-skies.org). You may access it by visiting www.eyes-on-the-skies.org.

News & Notes *continued*

addresses as your primary address (after verification) so your e-mail list messages are sent there.

Yahoo will verify each e-mail address by sending a verification code to that e-mail address. Go to the web page listed in the verification e-mail and enter the verification code and your Yahoo password, then that e-mail address is all set.

When you sign in your Yahoo ID, your membership in the e-group will not start immediately. Your request to join will be forwarded to the moderator of the group for approval. Once your TVS membership is verified, your e-group membership will be approved and you will receive an e-mail telling you you are approved.

Method 2:

If for some reason you do not want to sign up with Yahoo, you can still participate in the e-mail discussion group part of the TVS Yahoo group, but you will not get all the features.

Send an e-mail to the moderator of the group (currently me, cg@fx4m.com) asking to join without a Yahoo ID. Specify the e-mail address from which you will read and post. That's all.

Using the group

The archive of past e-mail discussions and the other features can be accessed at <http://groups.yahoo.com/group/trivalleystargazers>, which will require your Yahoo ID. You must have cookies enabled in your browser (Netscape or Internet Explorer) to log in (this is the usual and default setting).

You can send e-mail to the group (which will be sent to all the members and stored in the archive) by:

- Replying to someone's post on the group.
- Sending e-mail directly to:
trivalleystargazers@yahooogroups.com.
- Or logging into the web site,
<http://groups.yahoo.com/group/trivalleystargazers>, and selecting "post" under "messages" in the menu on the left side of the page.

There are currently about sixty members in our e-mail group. It is the best way we have for most of the whole club to communicate quickly. So far the traffic on the group has not been nearly so heavy that there has been any problem with being overwhelmed with lots of messages, so don't worry about that.

Don't be left out! Sign up today.

Astronomical Insights

by David Feindel

The winter months here almost dictate that you become an armchair astronomer. Clouds, rain, and wind add to the usual constraints of lack of time and moon phase to limit observing opportunities. But the winter months bring advantages, too. The colder weather keeps many indoors, reducing the number of cars driving by with blazing headlights and neighbors holding outdoor parties with lots of lighting. Darkness comes early. Oftentimes there is a layer of fog to reduce the Livermore/San Jose/Oakland light domes.

So I was looking forward to joining The Astronomy Connection's star-gazing opportunity at Del Valle Regional Park the other weekend. Clouds were non-existent, the wind was mild, and a nice bank of fog developed over the cities as darkness fell. Del Valle, in my limited experience, is a good local dark sky location; I counted only 3 porch lights on in the entire valley, and none were within a mile. Setting up and aligning the ETX took only a few minutes (why would anyone pay extra for GPS on a 'scope? And in a hint to my future, I'm now beginning to wonder why anyone would pay extra for go-to capability, too!).

What started as a quick, warmup tour of the easy targets turned into almost two hours' enjoyment of the spectacular. Saturn's rings were outstanding, with the shadow of the planet on the rings sharp and clear. I even convinced myself both Rhea and Dione were visible (we are dealing with only 90mm aperture, after all!). Jupiter popped out, with the GRS just past meridian, and details of wispieness showing in the belts. The Praesepe (M44 to AutoStar) jumped out at you from the darkness; the go-to wasn't needed or wanted. For the first time, I started looking for doubles. First, the easy ones like B Orionis (Rigel), h Cas, and a Gem. But I was not so successful on more difficult ones—z Orionis and s Cas proved out of reach. Maybe not the right stars, maybe not enough magnification, maybe eyes not well-enough trained yet, maybe too cold by this point. But an enjoyable evening of amateur astronomy.

One of the many helpful sources in my education is a web site focused on the Meade ETX models—www.weasner.com. It has literally hundreds of suggestions for techniques, accessories, maintenance, and other useful information for all small telescope owners. The site is so good, Mike Weasner has parlayed it into a book, *Using the ETX*, published by Springer. Those with Dobs might find the Small Dob Web Site at <http://personal.lig.bellsouth.net/lig/g/p/gpippin> useful, while Celestron NexStar owners should point their browser at www.pietro.org/Astro_C5/c5_nexstar.htm. Newsgroups are also a good source of information; look at <http://dir.groups.yahoo.com/dir/Science/Astronomy/Telescopes> for the 67 (!) groups on various models of telescopes.

Astro Events

Jupiter Transits

Below is a listing of transits times for various Jupiter related objects. The abbreviations are fairly straight forward: G=Ganymede, C=Callisto, I=Io, E=Europa, GRS=Great Red Spot, and if you see a 's' next to one of the moons, it means its shadow (e.g., Cs=Callisto's shadow); na means Jupiter is below the horizon at that time.

February

Date	Object	Starts	Ends
Wed 6	E	7:40p	10:20p
	GRS	7:10p	11:25p
	Es	9:20p	12:05a
Fri 8	GRS	8:45p	1:00a
Sat 9	GRS	na	9:00p
	I	11:43p	1:57a
Sun 10	Is	12:38a	2:53a
	GRS	2:35a	na
	GRS	10:30p	2:45a
Mon 11	I	6:10p	8:25p
	GRS	6:20p	10:35p
	Is	7:06p	9:20p
Tue 12	G	10:20p	1:32a
Wed 13	GRS	8:05p	12:20a
	E	10:00p	12:43a
	Es	11:55p	2:43a
Fri 15	GRS	9:35p	2:00a
	C	10:55p	1:30a
Sat 16	GRS	5:45p	9:50p
Sun 17	I	1:33a	3:45a
	Is	2:33a	na
	GRS	11:10p	3:35a
Mon 18	GRS	7:15p	11:30p
	I	8:00p	10:12p
	Is	9:00p	11:15p
Wed 20	GRS	8:45p	1:00a
Fri 22	GRS	10:20p	2:45a
Sat 23	GRS	6:15p	10:40p
Mon 25	GRS	7:55p	12:15a
	I	9:50p	12:02a
	Is	10:56p	1:10a
Wed 27	GRS	9:35p	1:50a
Thu 28	GRS	5:40p	9:45p
March			
Fri 1	GRS	11:10p	3:15a
Sat 2	GRS	7:11p	11:20p

Sun 3	Es	6:25p	9:10p
Mon 4	GRS	8:45p	1:05a
	I	11:41p	1:53a
Wed 6	I	6:06p	8:21p
	Is	7:20p	9:33p
	GRS	10:18p	2:35a
Thu 7	GRS	6:23p	10:35p
Sat 9	GRS	12:05a	na

Calendar of Events

February 9 & 16, 4:00 & 7:30 p.m.

What: *Forbidden Planet*

Where: Chabot Space & Science Center, Oakland

Cost: \$8.75 adult, \$6.50 youth and senior

Chabot Space & Science Center is showing the classic Sci-Fi flick *Forbidden Planet* in their Tien Megadome Theater. If you haven't seen Robby the Robot in awhile, now's your chance to see his stellar performance.

You can call 510-336-7373 or visit Ticketweb.com for advance tickets. Tickets will also be available at the door. www.chabotspace.org

The Distinguished Lecture Series Chabot Space & Science Center

Below is a listing of the upcoming speakers for Chabot's lecture series. The talks start at 7:30 p.m. in the Tien Megadome Theater, with a reception and refreshments following the talks. Admission is \$5. For reservations and information call 510-336-7373. Tickets may also be purchased through Ticketweb.com or at the door.

February 21

Who: Lewis Carroll Epstein

What: *Relativity Visualized*

If you have tried to understand special relativity but have not quite grasped it, or wondered why you can't go faster than light, than this is the evening for you.

March 21

Who: Dr. Gibor Basri

What: *What is a Planet?*

April 18

Who: Dr. George Smoot

What: *When the Universe Sang: Harmonics of the Early Sky*

May 16

Who: Ken Crowell

What: *The Universe at Midnight*

What's Up *by Debbie Dyke*

All times Pacific Standard unless otherwise noted.

February

- 3 Sun 1966 First soft landing on Moon by the Soviet spacecraft Luna 9. Luna returns the first pictures of the surface of the Moon.
- 4 Mon **Last Quarter Moon** 5:33 a.m.
1906 Clyde Tombaugh (discoverer of Pluto) born.
- 7 Thurs 1984 First untethered spacewalk performed by Challenger astronauts Bruce McCandless & Robert Stewart.
- 11 Mon **New Moon** 11:41 p.m.
- 15 Fri **Tri-Valley Stargazers general meeting.** 7:30 p.m. at the Unitarian Universalist Church, 1893 N. Vasco Road, Livermore.
1564 Galileo Galilei born.
- 16 Sat In the early evening look for Mars 5° N of the Moon.
- 17 Sun **Tri-Valley Stargazers discussion meeting.** 2:00 p.m. at the Round Table Pizza on 1024 E. Stanley Blvd., Livermore. Join your fellow members to discuss astro stuff over pizza.
- 18 Mon **Tri-Valley Stargazers Board meeting.** 7:00 p.m. at the Round Table Pizza in Livermore.
1930 Clyde Tombaugh discovers Pluto.
- 19 Tues Moon 7° N of the M45 (the Pleiades).
1473 Nicolaus Copernicus born.
- 20 Wed **First Quarter Moon** 4:02 a.m.
Saturn 1°16' E of the Moon.
1962 John Glenn circles the Earth.
- 21 Thur **Elementary School Science Fair** 6-9 p.m., Pleasanton Fairgrounds. Volunteers needed – see story p.3.
The Moon 1° E of M1 9:30 p.m.
- 22 Fri Jupiter 1° E of the Moon in the early evening.
- 24 Sun Moon 2° N of M44 (the Beehive Cluster) 10:00 p.m.
1968 Cambridge University astronomers announce discovery of pulsars.
- 27 Wed **Full Moon** 1:17 a.m. This full moon will be the largest for 2002.

March

- 2 Sat For the next two weeks, look for the Zodiacal Light in the west after the end of evening twilight.
- 4 Mon 1774 First recorded observation of the Orion Nebula by W. Herschel.
- 5 Tues **Last Quarter Moon** 5:24 p.m.
Early morning **double shadow transit** on Jupiter. Io's shadow first appears on Jupiter at 12:52 a.m., followed by Callisto's shadow at 2:15 a.m. Jupiter will set before the transits are complete.
1979 Voyager 1 flies past Jupiter and captures first detailed images of it and its moons.

2001-2002 Questionnaire

2001-2002 is the 13th year that a questionnaire will be used to improve the quality of the club programs and activities. The details of your response will be kept confidential. Summary results will be published in the April issue of *Prime Focus*. Please answer all questions that apply. Attach an extra sheet of paper if necessary.

How did you learn about the club? _____

Why did you join? _____

Are we meeting your expectations? ___ Yes ___ No

Comments _____

How long have you been interested in astronomy? _____ years

How long have you been a member? ___ <1 year ___ 1-3 years ___ 3-5 years ___ over 5 years

How often do you attend the monthly meetings?

___ Almost always ___ About half the time ___ Occasionally ___ Never

How often do you go to our dark sky site, H2O?

___ Several times a month ___ Once a month ___ Every 2-3 months ___ 1-3 times a year ___ Never

Rate the following activities for their importance to you (1 = very important, 5 = no interest).

___ Monthly meetings/speakers

___ CCD imaging

___ Star parties at our dark site

___ Astrophotography (film)

___ Public star parties

___ Deep-sky observing (faint objects)

___ Field trips to Yosemite, White Mountains, etc.

___ School programs/presentations

___ Using the 30" telescope at Fremont Peak

___ Computer programs, internet, bulletin boards

___ Telescope making

What kind of instrument do you use most for observing? _____

What program topics would you like us to cover at the meetings? _____

Do you have a computer? ___ Yes ___ No

Type? ___ Mac ___ PC

Do you have e-mail? ___ Yes ___ No

Do you have access to the internet? ___ Yes ___ No

If so, what type of connection? ___ Modem ___ DSL ___ Cable ___ Other (_____)

Have you visited the TVS web page (www.trivalleystargazers.org)? ___ Yes ___ No

Do you use your computer for astronomy related purposes? ___ Yes ___ No

If so, what? _____

Have you ever borrowed books from the TVS library? ___ Yes ___ No

Books you would like us to have: _____

Are you interested in helping with a school program? ___ Yes ___ No

How is the newsletter format? _____

How is the newsletter content? _____

Are there any activities that you would like us to provide? _____

Can you suggest any improvements to the club? _____

PRIMEFOCUS



Tri-Valley Stargazers
P.O. Box 2476
Livermore, CA 94551

Tri-Valley Stargazers Membership Application

Member agrees to hold Tri-Valley Stargazers, and any cooperating organizations or landowners, harmless from all claims of liability for any injury or loss sustained at a TVS function.

Name _____ Phone _____ e-mail _____

Address _____

Choose one: _____ I wish to download *Prime Focus* from the web (an e-mail notification will be sent to me when it's available for download). I understand that a paper version will *not* be mailed to me.
_____ I wish *Prime Focus* to be mailed to me.

Do not release my: _____ address, _____ phone, or _____ e-mail information to other TVS members.

Membership category: _____ \$5 Student _____ \$20 Individual _____ \$25 Family
_____ \$20 Hidden Hill Observatory (H2O) refundable key deposit (key property of TVS)
_____ \$29.95 *Sky & Telescope* magazine subscription (for one year)
_____ \$29.00 *Astronomy* magazine subscription (for one year)
\$ _____ Tax deductible contribution to Tri-Valley Stargazers
\$ _____ TOTAL – Return to: Tri-Valley Stargazers, P.O. Box 2476, Livermore, CA 94551

Membership information: Term is one calendar year, January through December. Student members must be less than 18 years old, or still in high school.