



Roanoke Valley Astronomical Society



News About Amateur Astronomy
In Southwestern Virginia
<http://www.roavas.org>

Vol. 21 - No. 6

June 2004

We'll See a Beautiful Sight from a Beautiful Site...

Aphrodite Glides Across Sol

By Venus de Milo

If you were alive in 1882, then you don't need to read this article. That was when the last transit of Venus occurred. The next one is immediately upon us, and RVAS members will have a "front row seat" at the top Roanoke Mountain overlook for this extremely beautiful and rare event, weather cooperating.

On the morning of **June 8th**, starting for us when the Sun peeks above the horizon about 6 a.m., we will have just over an hour of special seeing with solar adapted optics.

Many attending members will have telescopes modified to see the Sun safely, and it will also be possible to project the Sun's image onto a sheet of

white cardboard for indirect and safe viewing. If you don't have any solar-ready equipment, come on up anyway to share in the glorious view with your fellow members.

In theory, Venus-on-the-Sun could be directly seen with the naked eye, and you can try for

The twisting, one-lane road to the top of Roanoke Mountain is usually gated at this hour, but our resourceful leaders have arranged to have these gates open for our group. We will not be inviting the general public, because space is at a premium, and we don't want to be blamed for anybody's instant blindness.

You can access the Roanoke Mountain loop from the Parkway itself, immediately south of where the Parkway spur leads to Mill Mountain. It is on the opposite side of the Parkway from where the spur begins.



Two Suspicious Characters Check Out Our June 8th Viewing Site!

it too – if that's the last thing you ever want to see! Proper solar filters are mandatory for continued vision, even when the Sun is sitting low on the horizon.

Please make it to our viewing site no later than 5:45, and be ready to stay until almost 7:30 if possible. Want to bring some coffee and tasty breakfast munchies for your friends? Thanks in advance!

Astro-hajj

By Clark M. Thomas

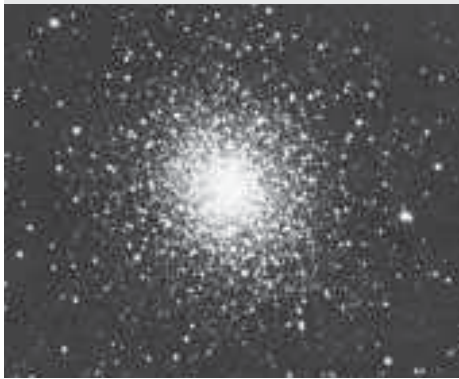
Central to the religious duties of a devout Muslim is one trip to Mecca. This is called the hajj. When the early hajjes were performed the Arabian peninsula was a wild place, very dangerous for travelers. Even getting to Arabia in

Mystery Object

He's the "Muscle Guy's" little Messier brother, and he's not as bright. Both near zenith for your viewing pleasure this late June.

Send your best guess to Dave Thomas, our Mystery Object Columnist, at

thomasde-ka8inl
@worldnet.att.net



the first place was dangerous for Medieval travelers. In contrast, modern Muslims can arrive by airplane, pampered in total safety. How does this all relate to us as amateur astronomers?

Looking at the stars from our back yards is safe and reasonably satisfying. But making an astro-hajj to a truly dark site, which involves more time and effort, can be much more "spiritually" satisfying.

Just as the modern hajjis are less challenged, and less spiritually rewarded, by air transportation, so too we modern astronomers

are excessively pampered by our high tech gizmos peering through light-polluted skies. Do we even know what we are missing?

If you have never stood under a totally dark sky, with absolutely no light domes to obscure the heavenly jewels, you have not experienced the purest joy that our avocation has to offer.

Total darkness need not be experienced every time we go out to star gaze, but I recommend it be seen and felt at least once a year. Knowing the glories that pristine skies have to offer will lead us to better appreciate what is left.

Astro-Quiz

Spherically curved mirrors cannot reflect light rays to a common focus. Yet, the great Arecibo radio telescope dish has precisely this shape. Why aren't Arecibo's radio images out of focus?

Answer to Last Month's Astro-Quiz: Intuitively, most people think of the year as symmetric, with each season having about 91 days. Actually, it's 187 days from the vernal equinox, the beginning of spring on about March 21st, to the autumnal equinox, the beginning of fall on about September 23rd. But it's only 180 days the other way around. The disparity rests on the laws of planetary motion formulated by Johannes Kepler. In spring and summer, Earth is farther away from the Sun. Thus, it travels more slowly in its orbit around the Sun than in the fall and winter. So, spring and summer are longer seasons than fall or winter.

The Roanoke Valley Astronomical Society is a membership organization of amateur astronomers dedicated to pursuit of observational and photographic activities. Meetings are held at 7:30 p.m. the third Monday of each month at Center in the Square Roanoke. Meetings are open to the public. Observing sessions are held one or two weekends a month at a dark-sky site. Yearly individual dues are \$20.00. Family membership is \$25.00; student membership is \$10.00. For information, call the RVAS Message Line at 540-774-5651. Articles, quotes, etc. published in the newsletter do not necessarily reflect the views of the RVAS, its editor, officers, or individual members.

RVAS web page: <http://www.roavas.org>

Officers/Executive Committee: Paul Caffrey, President (345-2847); Katherine Hix, Vice President (334-2443); Carol Mesimer, Secretary (334-1177); Lynn Slonaker, Treasurer (774-5695); Dennis Stevens, Executive Committee Member-At-Large (989-8801); Dave Godman, Immediate Past President (774-3337); John Goss, Past President (966-4606); Clark M. Thomas, Newsletter Editor (427-1873, clarkt7@cox.net). Dave Thomas, Mystery Object Columnist (thomasde-ka8inl@worldnet.att.net).

May Meeting Was Picture Perfect

By John Goss

Muggy summer nights in May? RVAS members had to contend with dodging thunderheads to log observing hours during much of the month. Do not give up, the skies will clear!

Comet NEAT has kept **Mike Good** busy. He created a video animation of his images that he captured over a 47 minute period on Friday night May 7. Mike's amazing clip easily showed the comet's movement against the background star field. A more detailed

view brought out the "bow shock" of comet ejecta colliding with the solar wind. As a bonus, the nucleus's rotation was plainly seen. Considering that it was all from a vantage point 30 million miles away, it was simply fantastic!

2004 may very well be remembered as the year of the transit. As the time approaches, more and more will be mentioned in the media. **Mark Klosinski**, without any misconstruing hyperbole, explained the history of Venus transits and what we can expect this time around. He introduced his talk with a rendition of John Philip Sousa's march, aptly entitled "The Transit of Venus." Starting with Kepler's misprediction in 1631, and Jeremiah Horrocks initial sighting in 1639, Mark discussed Edmund Halley's realization of the importance of transit timing for determining a more accurate solar distance. His parallax of Venus instructions, while leading to well planned international expeditions, unfortunately fell short due to the unexpected black-drop effect.

In December 1882 after the last transit of Venus, William Harkness, of the US Naval Observatory, wrote "There will be no other transits of Venus till the 21st century of our era has dawned upon the earth, and the June flowers are blooming in 2004. When the last transit occurred the intellectual world was awakened from the slumber of ages,

and that wondrous scientific activity which has led to our present advanced knowledge was just beginning. What will be the state of science when the next transit season arrives God only knows." Well, here we are!

Every year there are plenty of happenings in the sky that seize our interest. Some go unrecorded, but occasionally one of our club members grabs a camera and takes a shot. Recognizing their efforts, the May meeting concluded with the annual RVAS astrophotography exhibition and contest.

Members proudly displayed eight images that were taken during the past year. Included were deep sky Messier objects, Auroral displays of last fall, pleasing lunar shots, and offbeat equipment perspectives. While members were munching on the many scrumptious snacks that they brought, they carefully examined the work before them.

Once voting was completed, the ballots were tallied. Third place was given to **Mike Overacker** with his image of the galaxy M31 in Andromeda. Mike did not shoot through a telescope, but used a 300 mm f2.8 lens on an alt-az mount for this 2 1/2 minute exposure. Second place was earned by **Mark Hodges's** late October's aurora shot. This spur of the moment opportunity

Last Month's Mystery Object

The mystery object for the month of May was M44, also known as NGC2632, or the Beehive Cluster.

This loose cluster of stars is located in Cancer at R.A. 8 hrs 40.1 min. and Dec. +19 deg. 59 min. The cluster shines at the Apparent Magnitude of 3.1, and covers 95 arc minutes of the sky.



Continued on Page 4...

The Local Group

By Genevieve Goss

In talking to members of our "local group," I've learned something which might surprise you:

The most successful, lifelong amateur astronomers are probably the ones who started with the least equipment.

Lacking in gear, they compensated by reading and studying sky maps and astronomy books, and by fine-tuning their observing skills. This fundamental foundation stood them in good stead when the gear came later.

Today's computer-guided telescopes are amazing, a lot faster than the old-school way of learning the sky. But they're expensive...and for beginners, at least, may prevent you from learning the sky yourself. Not only will you be left helpless if anything malfunctions, but you'll miss the enjoyment of making your own journeys through the heavens.

Sky & Telescope magazine offers these suggestions for beginners:

1. Ransack your public library for astronomy books and publications to help you get started – a way to explore the hobby without investing a penny;

2. Learn the sky with the naked eye and a simple star map such as the one published with the RVAS newsletter;

3. Don't rush to buy a telescope which will probably frustrate and disappoint you.

4. Start with binoculars--the average 7 to 10 power pair can be an ideal "first telescope"; although if you're buying a pair, the larger the front lenses the better.

5. Get serious about maps and guidebooks – with those and your binocs you can learn the features of the moon, note the changing positions of the moons of Jupiter, and locate the star clusters, galaxies, and nebulae cataloged by Charles Messier in the late 18th century.

6. Talk with other amateurs in clubs such as RVAS, public observing sessions, and star parties.

7. When it's time for a telescope, plunge in deep, waiting until you can afford one with high-quality optics, and a solid, smooth-working mount.

8. Lose your ego! Astronomy teaches us patience and humility. The universe will not bend to your wishes. Take it on its own terms: the clouds blocking your view, the extreme distance and faintness of the objects you desire most, or the timing or location of a long-anticipated event.

Finally, **9.** Relax and have fun! Part of putting your ego aside is not going ballistic when your equipment malfunctions or the weather turns bad.

Pace your astronomy only as fast or as slow, as intense or as easy, as suits you. It's a hobby, not a job!

You may find, as many others have found, that amateur astronomy can be a a lifelong enjoyment.

Continued from Page 3...

May's Meeting...

was taken with a Canon digital G3 camera set for an exposure of 30 seconds. First place was awarded to (drum role, please) **Paul Caffrey** for a great image of the famous deep sky duo, M8 and M20. Is large, expensive astro-gear needed to do great work? Answering no, Paul chose as his instrument of choice, his 80 mm refractor mounted with a camera loaded with 800 Fuji film.

Keep your camera ready for the next photo op in the sky. Why not try your luck with the transit of Venus, Perseid meteor shower, the October 27 lunar eclipse, and the lunar occultation of Jupiter on December 7?

The RVAS wishes to thank all those who participated. Special mention goes to **Mike Kessler of KesslerColor Pro Color Labs** for generously donating prize certificates for 8x10, 11x14, and 16x20 prints.

A Devilishly Good Time at the Devil's Backbone...

Neat Night with a NEAT Comet

By John Goss

"Come look, it's the moon," yet another person exclaimed. **Paul Caffrey** took it all in stride as he explained to the astonished viewer that no, it wasn't the moon, but our closest planetary neighbor, Venus. Its crescent phase was becoming slimmer nightly as it slowly overtakes the earth in their respective orbits around the sun.

overlook on the Blue Ridge Parkway to be part of the event. In addition to Paul's set up, there were at least 14 other scopes and binoculars. Venus, Jupiter, Saturn, and the evening's main attraction, Comet NEAT, were the "stars" of the night.

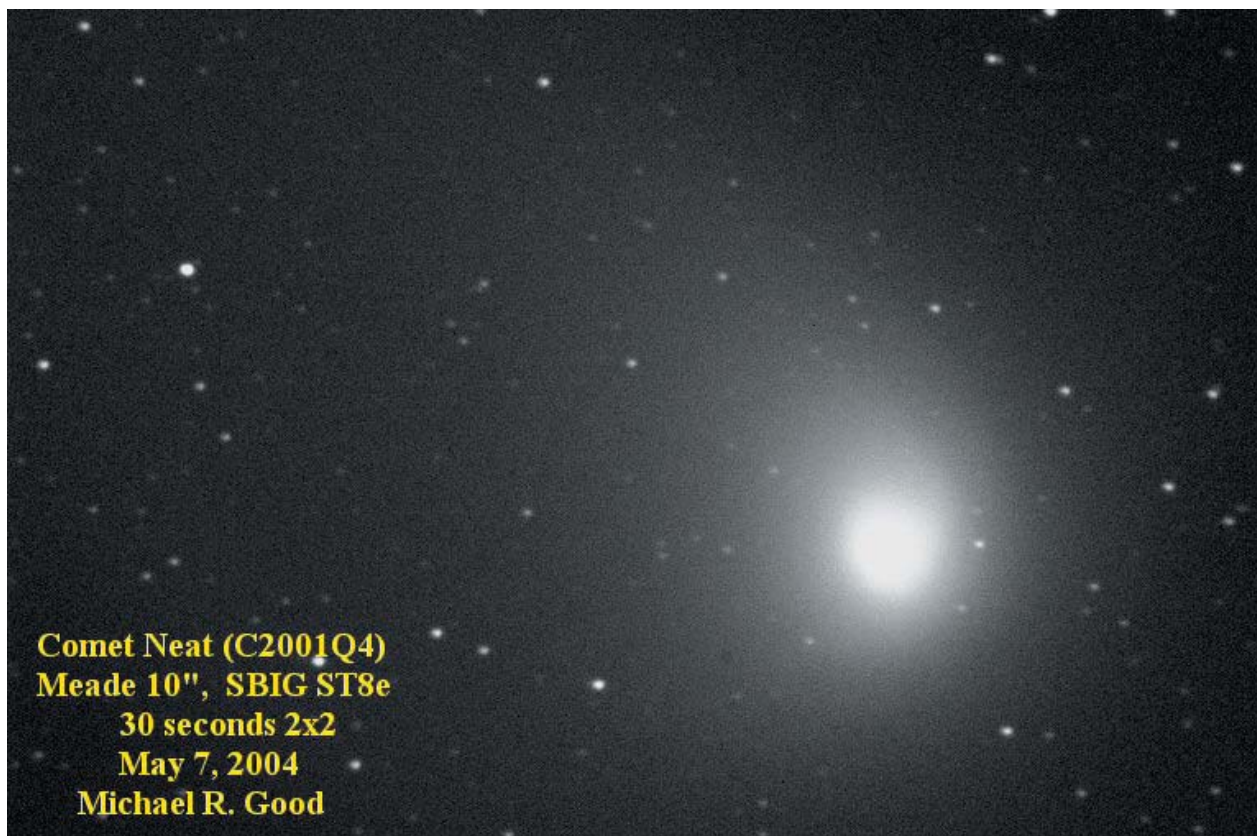
After examining dazzling Venus, people strolled over to the scopes aimed at Jupiter and Saturn. They were duly

Although Comet NEAT failed to reach astronomers' original expectations, it was hardly a disappointment, especially in binoculars. "Q-tip," is what one person said, "It looks like a Q-tip!"

Well, this interplanetary fuzz ball sporting a faint, wispy tail, seemed to delight all those who looked closely. For the keen-eyed, NEAT could also be seen without optical aid as a

very faint smudge to the upper left of Sirius. As a bonus, in the same view as the comet, were two of Messier's winter open clusters, M46 and M47.

Members were too numerous to list here, but the RVAS would



**Comet Neat (C2001Q4)
Meade 10", SBIG ST8e
30 seconds 2x2
May 7, 2004
Michael R. Good**

On Friday night May 7th the RVAS held its "Comet Connection and Planetary Viewing" for the general public.

Well over 250 people stopped at the Devil's Backbone

rewarded with a shadow transit across the giant planet, and the always incredible rings of Saturn.

Down the hill, your editor's lonely Dobsonian was showing folks the ethereal Sombrero and Whirlpool galaxies.

like to thank all of our club members who took the time to participate in this outreach!

The weather was perfect, the skies were perfect — but most of all, the people were perfect.

Green Bank Star Quest

By Katherine R. Hix

Here's your chance to get outside (I mean WAY outside), do some camping, and enjoy some serious astronomy under very dark skies.

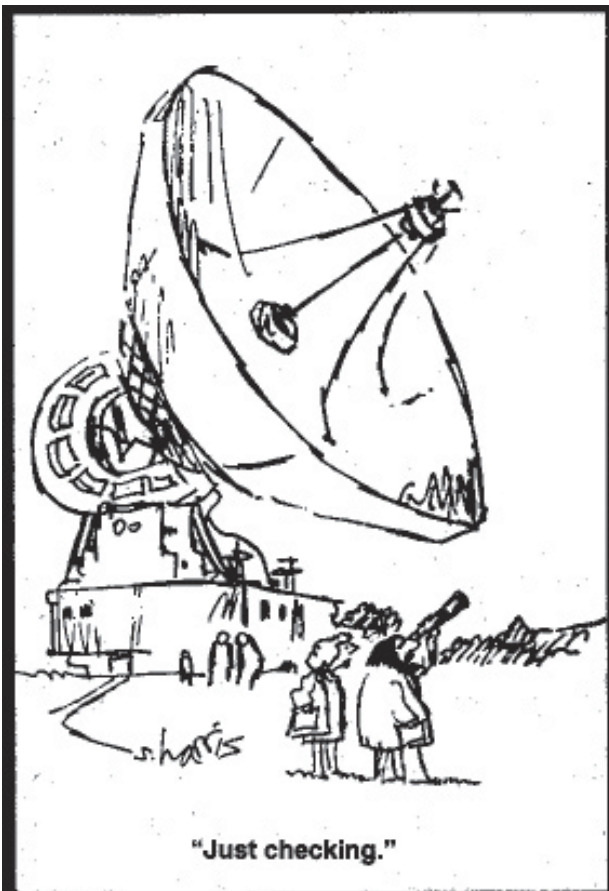
Hosted by the NRAO at Green Bank, West Virginia, in conjunction with the Central Appalachian Astronomy Club and the Kanawha Valley Astronomical Society, the **Green Bank Star Quest begins on Thursday, July 8, 2004, and ends on Sunday morning, July 11, 2004.** It isn't necessary to stay at the Star Quest all four days; you can choose the number of days at various price ranges.

Star Quest registration fees include your camp site (at which you may observe all night, every night - weather and/or spouse permitting), bath-house, tour of Jansky Lab (including the control room of the Green Bank Telescope), ice, film astrophotography classes, several CCD imaging classes, all lectures and other daily activities, one raffle ticket for the doorprize drawing, solar observing with a Coronado Solar Max 60 and CCD camera on a monitor, Star Lab, and battery recharging stations. There is a cafeteria where you may purchase 3 meals per day (except Sunday, when only breakfast is served) for \$6/meal, or \$18/day. You must pre-register and pre-pay for the meals.

Star Quest folks no later than June 18. After that, you may register at the gate; however, you will not be able to register for meals, and the prices will be higher - you probably won't be able to use the big scope, either.

For two people at one campsite, everything mentioned here is included except meals for \$75. (\$100 at the gate.) Four people pay \$100 (\$125 at the gate.)

Frankly, I can't think of a single good reason why anyone would let me near a big expensive radio telescope, and I've been trying to come up with something ever since I found out about this trip.



Best of all, up to 60 amateur astronomers will be selected by committee, based upon their written narrative requests, to use the 40-foot radio telescope to observe objects and gather data. They will work in teams of ten, some during the day and some at night. They will be given classroom instruction on the use of the telescope, and the data gathered will be analyzed by a professional radio astronomer.

Pre-registration for this program must be received by the

I'm running out of time. If any of you can think of a convincing reason why the NRAO would even let me near the place, please let me know what it is. Otherwise, my "essay" will read something like, "Please please please please let me use the big radio telescope, please!!!!"

Don't take your cell phones, and turn your radio off. It's quiet up there...so they can hear the aliens.

Here's the URL that gets you where you want to be. There's a registration form and other stuff on this site. Hope to see you there!

<http://www.caacwv.org/gbstarquest.htm>

Tempus Fugit

By Katherine Hix

Even before I knew about their connection with astronomy, I have always been fascinated with sundials. I wanted one when I was young, but if we had had one in our garden, I wouldn't have known how it worked.

Researching at the library, I found a modest little book called *Sundial in Our Garden*, privately published by Violet and Hal Trovillion in 1945. It contains an interesting collection of sundial mottoes that the couple gathered in their world travels.

Mottoes weren't something pertaining to sundials that I had considered until I found this book. Some of the mottoes are dreadful: "The Time Thou Killest Will in Time Kill Thee"; "Ye Know Not the Hour"; "One of the Hours Will be the Last of Life."

Some suggest that the viewer should be doing something other than standing around looking at sundials: "I Note the Time that You Waste"; "Work To-Day and Play To-Morrow." My favorites are the ones that don't scare you or make you feel guilty: "Bonjour Bonsoir"; or the ones with double meanings: "What Thou Seekest is a Shadow."

Although you won't necessarily need to come up with a motto, the theme of the July RVAS

meeting will be the sundial, the most ancient clock that we can still use to tell time. This is an opportunity for members to participate in the meeting program!

Please bring to the meeting on July 19 a simple project related to sundials. Your presentation doesn't have to be slick: a few photographs or your own drawings to pass around or place on a table will be fine.

The object is to determine how sundials work by your own observations, and whether the sundials you have built, or just observed, tell the time with any degree of accuracy. Even a stick in the ground, placed so that a shadow can be seen throughout the daylight hours (sunrise to sunset) is appropriate.

And if you come up with an interesting motto for your sundial, so much the better.

So, do a bit of reading to decide the best way to complete your project, and come to the July meeting with a little something to share with us about sundials. It's time to get busy!

*A Moment Mark How Small a Space,
The Dial Shows Upon the Face.
Yet Waste but One and You Will See,
Of How Great Moment it Can Be.*

Astro News to Use

◆ Have you ever missed some of your magazine subscriptions? As you know, being a member of the club entitles you to a discount from *Astronomy* and *S&T*. You must order through our treasurer to get the low discount subscription rate. The next club order date will be in July. Any questions? Contact Lynn Slonaker, RVAS Treasurer, at 774-5695.

◆ Have you visited Clark's astronomy links site lately? It is updated several times a week, and a recent update added over twenty new sites to the several hundred already there: <http://members.cox.net/clarkt7/astronomylinks>

◆ This newsletter is a vital TWO-WAY resource for all of our members. Please send in your ideas, photos and articles to the editor: clarkt7@cox.net

◆ Why not devote time this summer to showing school children what makes us so very happy? There are few joys greater than witnessing a child's eyes light up when seeing cosmic gems for the first time. With today's light pollution increasingly obscuring stars, our mission is that much more urgent.

◆ Attend July's meeting and welcome our new officers.

Society Calendar of Events and Activities for June 2004

JUNE MEETING: Monday, June 21st, 7:30 p.m. fifth floor meeting room, Center in the Square, Roanoke. The program will be from **Mark Klosinski**, a member of JPL's Solar System Ambassadors program. Mark says, "I will be covering the discovery of the asteroid belt, and asteroids that have been observed until present time. I will talk about the nature of asteroids and their place in our Solar System. I will show images of the NEAR Mission to the asteroid Eros, and its graceful landing on that asteroid. I will also show asteroids available to see this year."

● **"MEMBERS ONLY" WEEKEND OBSERVING SESSIONS:** Unless otherwise noted, observing sessions are held at Cahas Mountain Overlook, milepost 139 on the Blue Ridge Parkway.

● **Friday and Saturday, June 11th and 12th.** Sunset is at 8:41 p.m. Astronomical twilight ends at 10:34 p.m. The Moon rises at 2:56 and 3:19 a.m., respectively.

● **Friday and Saturday, June 18th and 19th.** Sunset is at 8:43 p.m. Astronomical twilight ends at 10:37 p.m. The Moon sets at 9:54 and 10:39 p.m., respectively.

● **July Sessions: 9th and 10th; 16th and 17th.**

● **FRANKLIN CO. PARKS DEPT./RVAS PUBLIC STARGAZE: Next session: August 7th, 9:15 p.m.**

● **ROANOKE CITY PARKS DEPT./RVAS PUBLIC STARGAZE: Saturday, June 19th, 9:30 p.m.,** Cahas Overlook, milepost 139, Blue Ridge Parkway. For City, County and other area residents. RVAS members welcome to participate. **Call the RVAS Message Line, 540-774-5651, for information.**

● **RVAS EXECUTIVE COMMITTEE MEETING:** Meetings are now held the first Tuesday of each month; contact one of the officers regarding specific location and time information.

Roanoke Valley Astronomical Society
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