



THE OBSERVER

East Valley Astronomy Club



NGC 7293: The Helix Nebula - APOD January 8, 2011 - Ed Henry Hay Creek Observatory

UPCOMING EVENTS:

- Public Star Party - September 12*
- Local Star Party - September 13*
- Evac Monthly Meeting - September 19*
- Deep Sky Star Party - September 20*
- Check out all of the upcoming club events in the Calendars on page 9*

INSIDE THIS ISSUE:

EVAC This Month *by Claude Haynes*

Hard to believe it is almost Fall. Kids are back in school, and Star Parties are starting up. The Monsoon appears to have almost run its course. Temperatures are below 100 (at 10pm). Sure signs that Fall is approaching.

We have a lot going on; and I hope you will help us have a great season. We have several school star parties scheduled, and they are a lot of fun. Often you will just park on a single object and explain as people come up to view. If we have a number of telescopes, we can pick interesting objects that

present a variety of experiences from Planets, the Moon, open clusters, double stars, and sometimes the Andromeda galaxy. The viewers are not always school children. They include parents, grandparents and younger siblings. It is really a family affair. Often this is their first experience at looking through a telescope. It really does make an impression. Think back to your first time to look through an eyepiece. Re-live that excitement through them.

Thanks again to Henry DeJong for an interesting talk on Black Holes.

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Evac This Month

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It is amazing what we have discovered, and a bit humbling to realize how much more we have to uncover. Our September speaker is Dr. Paul Knauth from ASU. Paul has been a frequent speaker at EVAC, and is always a treat. In October we have a special joint meeting with Saguaro Astronomy Club on a special night. We are meeting on the second Friday, on October 10. Our speaker will be Fred Espenak, who writes the Eclipse page for the NASA website. It should be a fascinating

lecture to discover how he does such precise calculations for eclipse predictions. Don't forget the most fun event of the Fall; the All Arizona Star Party on October 24-25. It is a great way to get together and celebrate this great hobby.

Keep looking up
Claude

If It's Clear...

by Fulton Wright, Jr. Prescott Astronomy Club

September 2014

Celestial events (from Sky & Telescope magazine, Astronomy magazine, and anywhere else I can find information) customized for Prescott, Arizona. Remember, the Moon is 1/2 degree or 30 arc-minutes in diameter. All times are Mountain Standard Time.

On Monday, September 1, the Moon is at first quarter phase and sets at 11:17 PM.

On the night of Friday, September 5, at 12:29 AM (Saturday), Beta 2 Capricorni (magnitude 6) will be occulted by the Moon. Six minutes later, Beta 1 Capricorni (magnitude 3) will be occulted.

On Monday, September 8, at 6:31 PM (15 minutes before sunset), the full Moon rises spoiling any chance of seeing faint fuzzies for the night.

On Monday, September 15, the Moon is at last quarter phase and rises at 11:38 PM.

On Monday, September 22, autumn begins in the Northern Hemisphere and we start having longer nights than days.

On Tuesday, September 23, it is new Moon and you have all night to hunt for faint fuzzies.

On Thursday, September 25, about 5:00 AM, you can see Europa's shadow near the middle of Jupiter. Tomorrow, at the same time, Ganymede's shadow appears at the same place.

On Saturday, September 27, from about 6:45 PM (civil dusk) to about 8:30 PM (Moonset), you can watch the Moon creep up on Saturn. Look low in the southwest for the pair. Too bad we can't see them at 10:28 PM when the Moon goes in front of Saturn.

Around Sunday, September 28, Mars (magnitude 1) is passing about 3 degrees from Antares (also magnitude 1). Mars is on top. They are both famous for their red color.

On Tuesday, September 30, starting about 9:00 PM, the Moon moves in front of the open star cluster, M 23. By 10:00 PM the cluster is almost completely covered. The cluster and the Moon set around 11:00 PM.



NASA's Spitzer Telescope Witnesses Asteroid Smashup



August 28, 2014

NASA's Spitzer Space Telescope has spotted an eruption of dust around a young star, possibly the result of a smashup between large asteroids. This type of collision can eventually lead to the formation of planets.

Scientists had been regularly tracking the star, called NGC 2547-ID8, when it surged with a huge amount of fresh dust between August 2012 and January 2013.

"We think two big asteroids crashed into each other, creating a huge cloud of grains the size of very fine sand, which are now smashing themselves into smithereens and slowly leaking away from the star," said lead author and graduate student Huan Meng of the University of Arizona, Tucson.

While dusty aftermaths of suspected asteroid collisions have been observed by Spitzer before, this is the first time scientists have collected data before and after a planetary system smashup. The viewing offers a glimpse into the vio-

lent process of making rocky planets like ours.

Rocky planets begin life as dusty material circling around young stars. The material clumps together to form asteroids that ram into each other. Although the asteroids often are destroyed, some grow over time and transform into proto-planets. After about 100 million years, the objects mature into full-grown, terrestrial planets. Our moon is thought to have formed from a giant impact between proto-Earth and a Mars-size object.

In the new study, Spitzer set its heat-seeking infrared eyes on the dusty star NGC 2547-ID8, which is about 35 million years old and lies 1,200 light-years away in the Vela constellation. Previous observations had already recorded variations in the amount of dust around the star, hinting at possible ongoing asteroid collisions. In hope of witnessing an even larger impact, which is a key step in the birth of a terrestrial planet, the astronomers turned to Spitzer to observe the star regularly. Beginning in May 2012, the telescope began watching the star,

Nasa's Spitzer Telescope Witnesses Asteroid Smashup

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sometimes daily.

A dramatic change in the star came during a time when Spitzer had to point away from NGC 2547-ID8 because our sun was in the way. When Spitzer started observing the star again five months later, the team was shocked by the data they received.

"We not only witnessed what appears to be the wreckage of a huge smash-up, but have been able to track how it is changing -- the signal is fading as the cloud destroys itself by grinding its grains down so they escape from the star," said Kate Su of the University of Arizona and co-author on the study. "Spitzer is the best telescope for monitoring stars regularly and precisely for small changes in infrared light over months and even years."

A very thick cloud of dusty debris now orbits the star in the zone where rocky planets form. As the scientists observe the star system, the infrared signal from this cloud varies based on what is visible from Earth. For example, when the elongated cloud is facing us, more of its surface area is exposed and the signal is greater. When the head or the tail of the cloud is in view, less infrared light is observed. By studying the infrared oscillations, the team is gathering first-of-its-kind data on the detailed process and outcome of collisions that create rocky planets like Earth.

"We are watching rocky planet formation happen right in front of us," said George Rieke, a University of Arizona co-author of the new study. "This is a unique chance to study this process in near real-time."

The team is continuing to keep an eye on the star with Spitzer. They will see how long the elevated dust levels persist, which will help them calculate how often such events happen around this and other stars. And they might see another smashup while Spitzer looks on.

The results of this study are posted online Thursday in the journal *Science*.

NASA's Jet Propulsion Laboratory in Pasadena, California, manages the Spitzer Space Telescope mission for NASA's Science Mission Directorate in Washington. Science operations are conducted at the Spitzer Science Center at the California Institute of Technology in Pasadena. Spacecraft operations are based at Lockheed Martin Space Systems Company in Littleton, Colorado. Data are archived at the Infrared Science Archive housed at the Infrared Processing and Analysis Center at Caltech. Caltech manages JPL for NASA.

For more information about Spitzer, visit: <http://www.nasa.gov/spitzer>

FIRST QUARTER MOON ON SEPTEMBER 2 AT 07:11

***FULL MOON ON SEPTEMBER 8 AT 21:38**

LAST QUARTER MOON ON SEPTEMBER 15 AT 22:05

NEW MOON ON SEPTEMBER 24 AT 02:14

Looking for that perfect weekend activity?

Why not resolve to getting involved?

Contact Dave Coshow to join the staff at GRCO

Email: grco@evaconline.org



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Upcoming Meetings

September 19

October 17

November 21

December 19

January 16

February 20

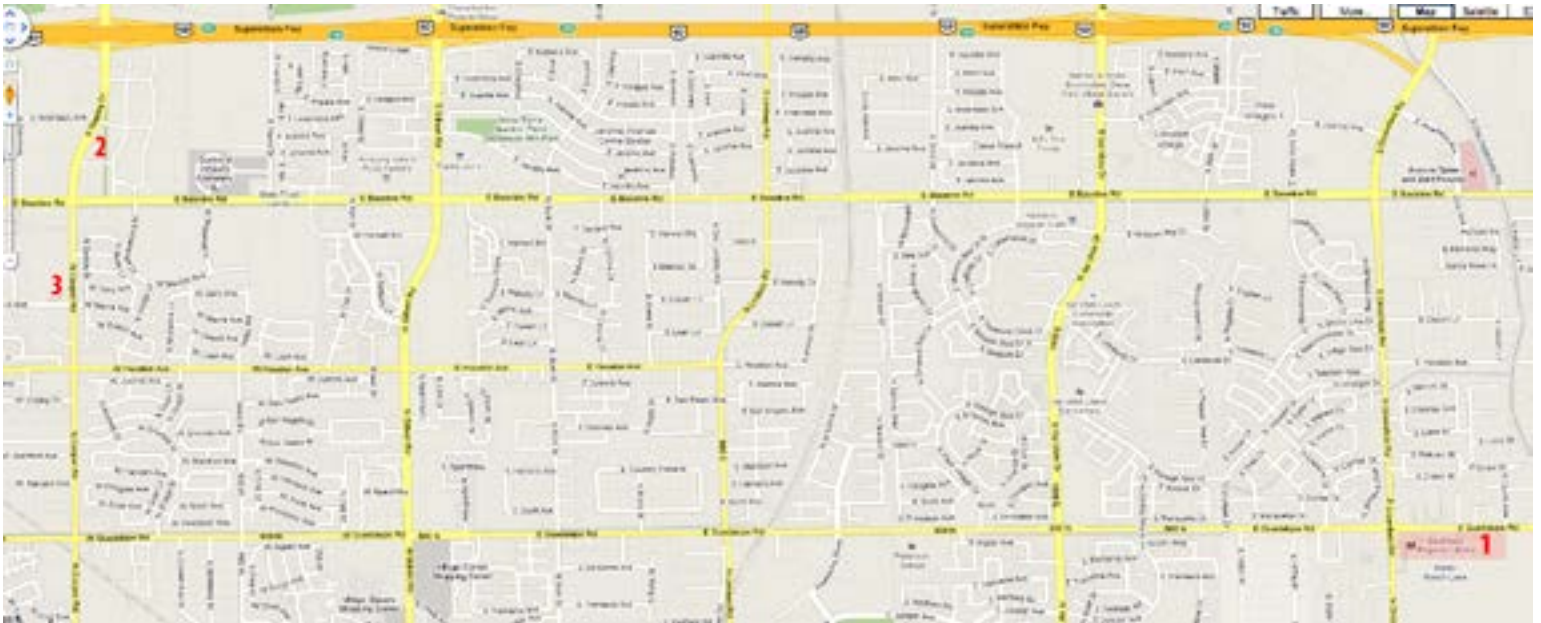
March 20

The monthly general meeting is your chance to find out what other club members are up to, learn about upcoming club events and listen to presentations by professional and well-known amateur astronomers.

Our meetings are held on the third Friday of each month at the Southeast Regional Library in Gilbert. The library is located at 775 N. Greenfield Road; on the southeast corner of Greenfield and Guadalupe Roads. Meetings begin at 7:30 pm.

All are welcome to attend the pre-meeting dinner at 5:30 pm. We meet at Old Country Buffet, located at 1855 S. Stapley Drive in Mesa. The restaurant is in the plaza on the northeast corner of Stapley and Baseline Roads, just south of US60.

Visitors are always welcome!



2

Old Country Buffet
1855 S. Stapley Drive
Mesa, Az. 85204

1

Southeast Regional Library
775 N. Greenfield Road
Gilbert, Az. 85234



SEPTEMBER 2014

Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
	1	2	3	4	5	6
7	8	9	10	11	12	13
14	15	16	17	18	19	20
21	22	23	24	25	26	27
28	29	30				

Sept 12 - Riparian Public Star Party/Skywatch

Sept 13 - Local Star Party

Sept 15 - EduPrize School

Sept 16 - In Time and Space

Sept 19 - General Meeting at SE Library

Sept 20 - Deep Sky Star Party

Sept 25 - Dobson Academy

OCTOBER 2014

Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
			1	2	3	4
5	6	7	8	9	10	11
12	13	14	15	16	17	18
19	20	21	22	23	24	25
26	27	28	2	30	31	

Oct 4 - Astronomy Day at Az Science Center

Oct 8 - Total Lunar Eclipse

Oct 10 - Riparian Public Star Party/Skywatch

Oct 10 - Joint Meeting with Saguaro Astronomy Club

Oct 18 - Local Star Party

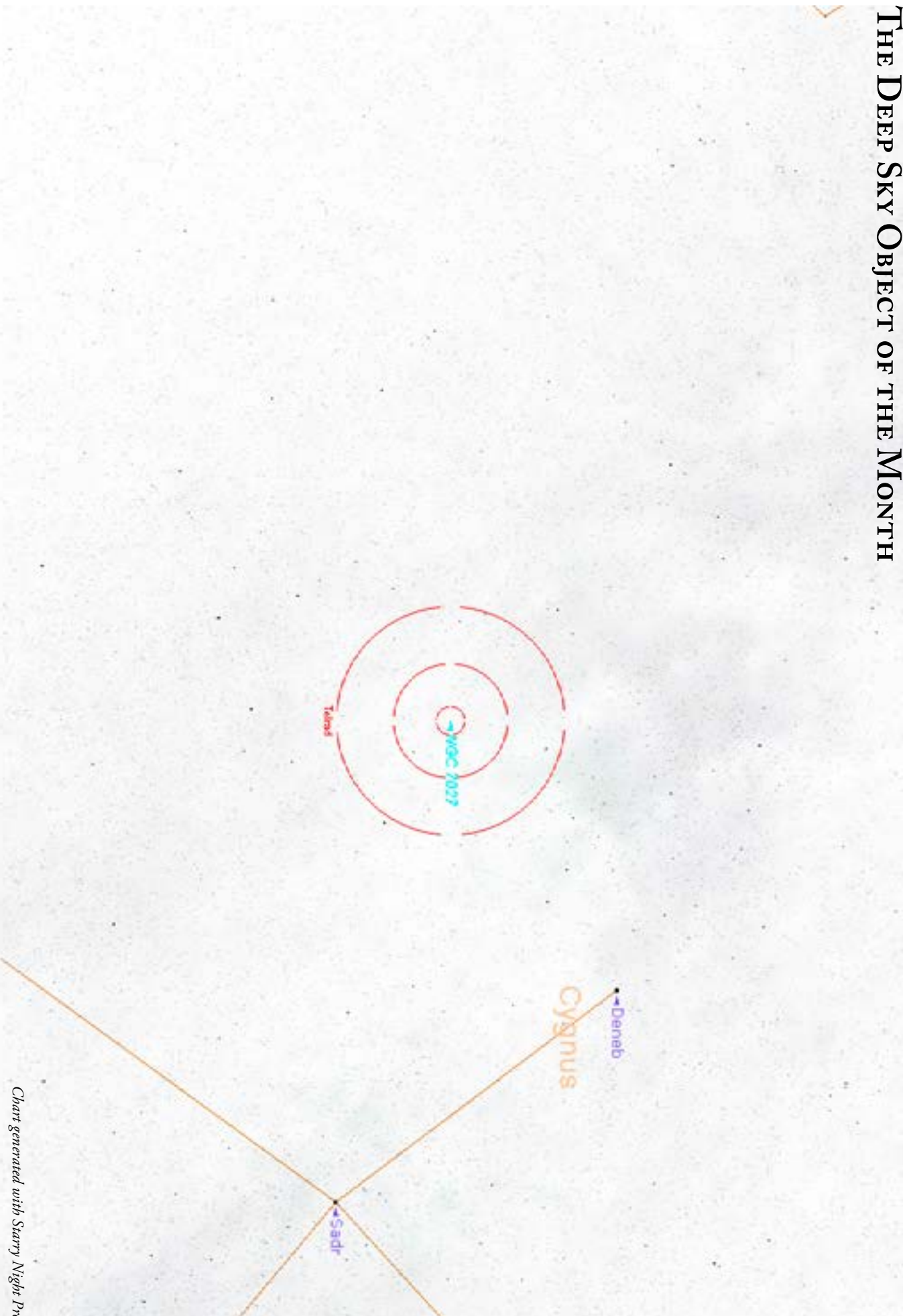
Oct 18 - 2nd Annual Library Con

Oct 23 - Partial Solar Eclipse

Oct 24 - All Arizona Star Party

Oct 25 - All Arizona Star Party

THE DEEP SKY OBJECT OF THE MONTH



NGC 7027 (PK 084-3.1) Planetary Nebula in Cygnus

RA $21^{\text{h}} 07^{\text{m}} 01.7^{\text{s}}$ DEC $+42^{\circ} 14' 10''$ Magnitude: 9.6 Size: 18"

East Valley Astronomy Club -- 2013 Membership Form

Please complete this form and return it to the club Treasurer at the next meeting or mail it to EVAC, PO Box 2202, Mesa, Az, 85214-2202. Please include a check or money order made payable to EVAC for the appropriate amount.

IMPORTANT: All memberships expire on December 31 of each year.

Select one of the following:

- New Member
 Renewal
 Change of Address

New Member Dues (dues are prorated, select according to the month you are joining the club):

- | | |
|---|---|
| <input type="checkbox"/> \$30.00 Individual January through March | <input type="checkbox"/> \$22.50 Individual April through June |
| <input type="checkbox"/> \$35.00 Family January through March | <input type="checkbox"/> \$26.25 Family April through June |
| <input type="checkbox"/> \$15.00 Individual July through September | <input type="checkbox"/> \$37.50 Individual October through December |
| <input type="checkbox"/> \$17.50 Family July through September | <input type="checkbox"/> \$43.75 Family October through December |
- Includes dues for the following year*

Renewal (current members only):

- \$30.00 Individual**
 \$35.00 Family

Name Badges:

- \$10.00** Each (including postage) Quantity: _____

Name to imprint: _____

Total amount enclosed:

Please make check or money order payable to EVAC

- Payment was remitted separately using PayPal
 Payment was remitted separately using my financial institution's online bill payment feature

Name:

Phone:

Address:

Email:

City, State, Zip:

- Publish email address on website

URL:

How would you like to receive your monthly newsletter? (choose one option):

- Electronic delivery (PDF) *Included with membership*
 US Mail **Please add \$10 to the total payment**

Areas of Interest (check all that apply):

- | | |
|--|---|
| <input type="checkbox"/> General Observing | <input type="checkbox"/> Cosmology |
| <input type="checkbox"/> Lunar Observing | <input type="checkbox"/> Telescope Making |
| <input type="checkbox"/> Planetary Observing | <input type="checkbox"/> Astrophotography |
| <input type="checkbox"/> Deep Sky Observing | <input type="checkbox"/> Other |

Please describe your astronomy equipment:

Would you be interested in attending a beginner's workshop? Yes No

How did you discover East Valley Astronomy Club?

PO Box 2202
Mesa, AZ 85214-2202
www.evaconline.org

All members are required to have a liability release form (waiver) on file. Please complete one and forward to the Treasurer with your membership application or renewal.

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Please send your contributions, tips, suggestions and comments to the Editor at: news@evaonline.org Contributions may be edited. The views and opinions expressed in this newsletter do not necessarily represent those of the East Valley Astronomy Club, the publisher or editor.

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www.evaonline.org

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