The New Syzygy

The Newsletter of the Kern Astronomical Society No. 578 November 2023

KAS Open Meeting

First Friday of

Every Month

Round Table Pizza,
4200 Gosford Road,
Suite 101, Bakersfield, CA

Dinner & Social 6:30 pm
Meeting/Program 7:30 pm

Our regular monthly meeting will be held on November 3rd at Round Table Pizza at 4200 Gosford Road.

Join us on Facebook: https://www.facebook.com/groups/syzygy/

Visit our Web Page at https://www.kernastro.org

Contact us at kernastronomicalsociety@gmail.com

Reach for the Stars

Upcoming Programs

November – Europa Clipper
December – Annual Christmas Party

Upcoming Events

11/4 – Last Quarter Moon Star Party at Chuchupate

11/11 – New Moon Star Party at Chuchupate

Look for more information on these events on the club Facebook page and in your e-mail. Also, Darren will be providing details at our November meeting.

Time to renew your Kern Astronomical Society Membership

The Kern Astronomical Society Board would like to have all renewal dues paid by Christmas 2023. Renewal notices are available at our next meeting on Friday November 3rd. Please review your notice to make sure all of your information is correct. Our dues for the 2023 /2024 year will be $25. Please be prepared to pay your dues by bringing a check [Made out to Kern Astronomical Society] or cash. We do not accept credit cards. If you are unable to attend our next meeting, your renewal invoice will be emailed to you.

On another note, you should be receiving the Reflector magazine. You have the choice of receiving it in paper or electronic form. Paper is the default format, but if you prefer to receive the electronic copy, simply let Ron Church [church.ronirpc@gmail.com] know and he will change it for you. If the paper copy is fine, you don't need to do anything. On the other hand, if you don't want to receive the Reflector magazine at all, in any format, just let Ron Church know.

October 14 Annular Solar Eclipse

Photo Credit: Nick Strobel

Photo Credit: Darren Bly

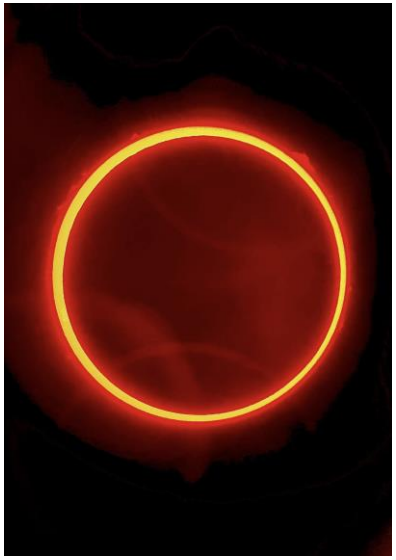
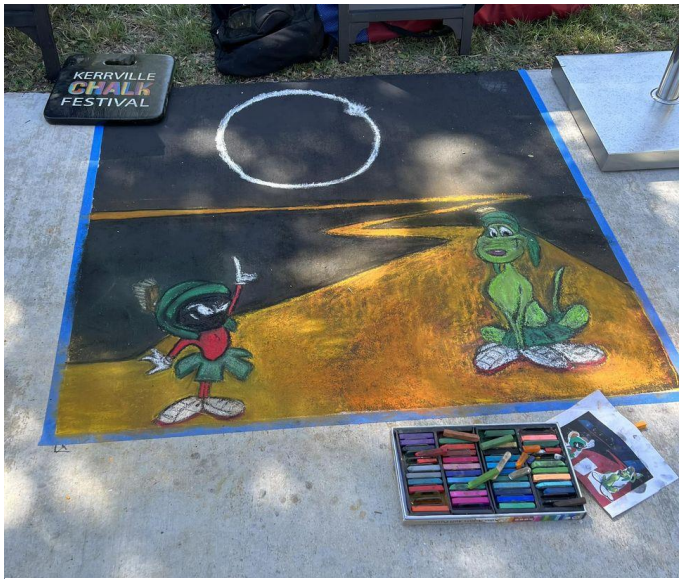


Photo Credit: Alan Kopp – Northern New Mexico



Kerrville, TX chalk festival on October 14

Photo Credit: Alton Ahrens

KAS Astrophotography

The Ghost Nebula in Cepheus by: John Hester

The Helix Nebula in Aquarius by: John Hester

The Bubble Nebula in Cassiopeia by: John Hester

The Prawn Nebula in Scorpius by: John Hester

The Evening Sky Map

FREE* EACH MONTH FOR YOU TO EXPLORE, LEARN & ENJOY THE NIGHT SKY

WWW.SKYMAPS.COM

NORTHERN HEMISPHERE
NOVEMBER 2023

Sky Calendar – November 2023

3 **Jupiter at opposition** at 5h UT. This is the best time to use a telescope to observe the largest planet in the solar system. Mag. –2.9.

5 **Moon near Beehive cluster M44** at 0h UT (morning sky).

5 **Southern Taurid meteor shower peaks**. Active from Sept 23 to Dec 8. Associated with Comet 2P/Encke.

5 **Last Quarter Moon** at 8:38 UT.

6 **Moon near Regulus** at 21h UT (morning sky).

6 **Moon at apogee** (farthest from Earth) at 22h UT (distance 404,569km; angular size 29.5').

9 **Moon near Venus** at 11h UT (46° from Sun, morning sky). Mag. –4.3. Daytime occultation visible from Europe.

11 **Moon near Spica** at 9h UT (morning sky).

11 **Northern Taurid meteor shower peaks**. Active from Oct 13 to Dec 2. Occasional bright fireball.

13 **New Moon** at 9:26 UT. Start of lunation 1248.

13 **Uranus at opposition** at 17h UT. Mag. 5.6.

14 **Moon near Mercury** at 15h UT (15° from Sun, evening sky). Mag. –0.4.

14 **Moon, Mercury and Antares** within circle 4.2° diameter at 21h UT (evening sky). Mags. –0.0 & 1.0.

14 **Moon near Antares** at 21h UT (18° from Sun, evening sky). Occultation visible from Canada, USA, Mexico.

17 **Mercury 2.5° NNE of Antares** at 3h UT (evening sky). Mags. –0.4 and 1.0.

18 **Leonid meteor shower peaks**. Arises from debris ejected by comet 55P/Tempel-Tuttle. Produces very fast meteors (70 km/sec). Expect 10–15 meteors/hour under dark skies.

20 **First Quarter Moon** at 10:50 UT.

20 **Moon near Saturn** at 17h UT (evening sky). Mag. 0.9.

21 **Moon at perigee** (closest to Earth) at 21:16 UT (distance 369,818km; angular size 32.3').

25 **Moon near Jupiter** at 8h UT (evening sky). Mag. –2.8.

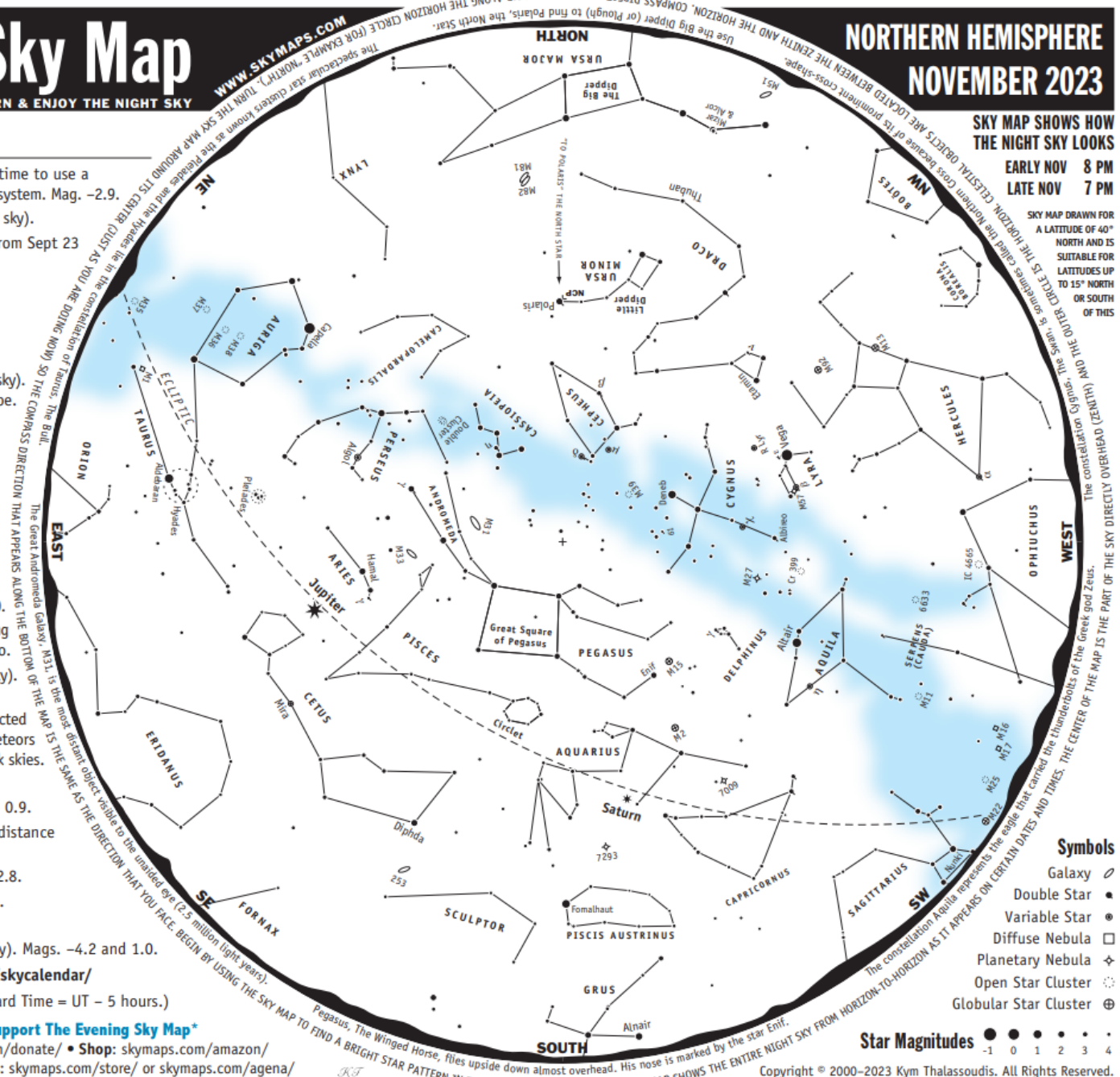
27 **Moon near the Pleiades** at 2h UT (midnight sky).

27 **Full Moon** at 9:15 UT.

29 **Venus 4.2° NNE of Spica** at 18h UT (morning sky). Mags. –4.2 and 1.0.

More sky events and links at http://Skymaps.com/skycalendar/

All times in Universal Time (UT). (USA Eastern Standard Time = UT – 5 hours.)



Skymaps.com

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** Helping curious minds worldwide to explore the wonders of the Universe*

About the Celestial Objects

Listed on this page are several of the brighter, more interesting celestial objects visible in the evening sky this month (refer to the monthly sky map). The objects are grouped into three categories. Those that can be easily seen with the naked eye (that is, without optical aid), those easily seen with binoculars, and those requiring a telescope to be appreciated. **Note, all of the objects (except single stars) will appear more impressive when viewed through a telescope or very large binoculars.** They are grouped in this way to highlight objects that can be seen using the optical equipment that may be available to the star gazer.

Tips for Observing the Night Sky

When observing the night sky, and in particular deep-sky objects such as star clusters, nebulae, and galaxies, it's always best to observe from a dark location. Avoid direct light from street lights and other sources. If possible observe from a dark location away from the light pollution that surrounds many of today's large cities.

You will see more stars after your eyes adapt to the darkness—usually about 10 to 20 minutes after you go outside. Also, if you need to use a torch to view the sky map, cover the light bulb with red cellophane. This will preserve your dark vision.

Finally, even though the Moon is one of the most stunning objects to view through a telescope, its light is so bright that it brightens the sky and makes many of the fainter objects very difficult to see. So try to observe the evening sky on moonless nights around either New Moon or Last Quarter.

Astronomical Glossary

Conjunction – An alignment of two celestial bodies such that they present the least angular separation as viewed from Earth.

Constellation – A defined area of the sky containing a star pattern.

Diffuse Nebula – A cloud of gas illuminated by nearby stars.

Double Star – Two stars that appear close to each other in the sky; either linked by gravity so that they orbit each other (binary star) or lying at different distances from Earth (optical double). Apparent separation of stars is given in seconds of arc (").

Ecliptic – The path of the Sun's center on the celestial sphere as seen from Earth.

Elongation – The angular separation of two celestial bodies. For Mercury and Venus the greatest elongation occurs when they are at their most angular distance from the Sun as viewed from Earth.

Galaxy – A mass of up to several billion stars held together by gravity.

Globular Star Cluster – A ball-shaped group of several thousand old stars.

Light Year (ly) – The distance a beam of light travels at 300,000 km/sec in one year.

Magnitude – The brightness of a celestial object as it appears in the sky.

Open Star Cluster – A group of tens or hundreds of relatively young stars.

Opposition – When a celestial body is opposite the Sun in the sky.

Planetary Nebula – The remnants of a shell of gas blown off by a star.

Universal Time (UT) – A time system used by astronomers. Also known as Greenwich Mean Time. USA Eastern Standard Time (for example, New York) is 5 hours behind UT.

Variable Star – A star that changes brightness over a period of time.

NORTHERN HEMISPHERE
NOVEMBER 2023

CELESTIAL OBJECTS

Skymaps.com

Easily Seen with the Naked Eye

Altair	Aql	●	Brightest star in Aquila. Name means "the flying eagle". Dist=16.7 ly.
Capella	Aur	●	The 6th brightest star. Appears yellowish in color. Spectroscopic binary. Dist=42 ly.
δ Cephei	Cep	◔	Cepheid prototype. Mag varies between 3.5 & 4.4 over 5.366 days. Mag 6 companion.
Deneb	Cyg	●	Brightest star in Cygnus. One of the greatest known supergiants. Dist=1,400±200 ly.
α Herculis	Her	◔	Semi-regular variable. Magnitude varies between 3.1 & 3.9 over 90 days. Mag 5.4 companion.
Vega	Lyr	●	The 5th brightest star in the sky. A blue-white star. Dist=25.0 ly.
Algol	Per	●	Famous eclipsing binary star. Magnitude varies between 2.1 & 3.4 over 2.867 days.
Fomalhaut	PsA	●	Brightest star in Piscis Austrinus. In Arabic the "fish's mouth". Dist=25 ly.
Pleiades	Tau	⁘	The Seven Sisters. Spectacular cluster. Many more stars visible in binoculars. Dist=399 ly.
Hyades	Tau	⁘	Large V-shaped star cluster. Binoculars reveal many more stars. Dist=152 ly.
Aldebaran	Tau	●	Brightest star in Taurus. It is not associated with the Hyades star cluster. Dist=66.7 ly.
Polaris	UMi	◔	The North Pole Star. A telescope reveals an unrelated mag 8 companion star. Dist=433 ly.

Easily Seen with Binoculars

M31	And	⬭	The Andromeda Galaxy. Most distant object visible to naked eye. Dist=2.5 million ly.
M2	Aqr	◍	Resembles a fuzzy star in binoculars.
η Aquilae	Aql	●	Bright Cepheid variable. Mag varies between 3.6 & 4.5 over 7.166 days. Dist=1,200 ly.
M38	Aur	⁘	Stars appear arranged in "pi" or cross shape. Dist=4,300 ly.
M36	Aur	⁘	About half size of M38. Located in rich Milky Way star field. Dist=4,100 ly.
M37	Aur	⁘	Very fine star cluster. Discovered by Messier in 1764. Dist=4,400 ly.
μ Cephei	Cep	●	Herschel's Garnet Star. One of the reddest stars. Mag 3.4 to 5.1 over 730 days.
Mira	Cet	●	Famous long period variable star. Mag varies between 3.0 & 10.1 over 332 days.
χ Cygni	Cyg	●	Long period pulsating red giant. Magnitude varies between 3.3 & 14.2 over 407 days.
M39	Cyg	⁘	May be visible to the naked eye under good conditions. Dist=900 ly.
ν Draconis	Dra	◔	Wide pair of white stars. One of the finest binocular pairs in the sky. Dist=100 ly.
M13	Her	◍	Best globular in northern skies. Discovered by Halley in 1714. Dist=23,000 ly.
M92	Her	◍	Fainter and smaller than M13. Use a telescope to resolve its stars.
ε Lyrae	Lyr	◔	Famous Double Double. Binoculars show a double star. High power reveals each a double.
R Lyrae	Lyr	●	Semi-regular variable. Magnitude varies between 3.9 & 5.0 over 46.0 days.
IC 4665	Oph	⁘	Large, scattered open cluster. Visible with binoculars.
6633	Oph	⁘	Scattered open cluster. Visible with binoculars.
M15	Peg	◍	Only globular known to contain a planetary nebula (Mag 14, d=1"). Dist=30,000 ly.
Double Cluster	Per	⁘	Double Cluster in Perseus. NGC 869 & 884. Excellent in binoculars. Dist=7,300 ly.
M25	Sgr	⁘	Bright cluster located about 6 deg N of "teapot's" lid. Dist=1,900 ly.
253	Scl	⬭	Fine, large, cigar-shaped galaxy. Requires dark sky. Member of Sculptor Group.
Mizar & Alcor	UMa	◔	Good eyesight or binoculars reveals 2 stars. Not a binary. Mizar has a mag 4 companion.
Cr 399	Vul	⁘	Coathanger asterism or "Brocchi's Cluster". Not a true star cluster. Dist=218 to 1,140 ly.

Telescopic Objects

γ Andromedae	And	◔	Attractive double star. Bright orange star with mag 5 blue companion. Sep=9.8".
7009	Aqr	✧	Saturn Nebula. Requires 8-inch telescope to see Saturn-like appendages.
7293	Aqr	✧	Helix Nebula. Spans nearly 1/4 deg. Requires dark sky. Dist=300 ly.
γ Arietis	Ari	◔	Impressive looking double blue-white star. Visible in a small telescope. Sep=7.8".
η Cassiopeiae	Cas	◔	Yellow star mag 3.4 & orange star mag 7.5. Dist=19 ly. Orbit=480 years. Sep=12".
Albireo	Cyg	◔	Beautiful double star. Contrasting colours of orange and blue-green. Sep=34.4".
61 Cygni	Cyg	◔	Attractive double star. Mags 5.2 & 6.1 orange dwarfs. Dist=11.4 ly. Sep=28.4".
γ Delphini	Del	◔	Appear yellow & white. Mags 4.3 & 5.2. Dist=100 ly. Struve 2725 double in same field.
β Lyrae	Lyr	◔	Eclipsing binary. Mag varies between 3.3 & 4.3 over 12.940 days. Fainter mag 7.2 blue star.
M57	Lyr	✧	Ring Nebula. Magnificent object. Smoke-ring shape. Dist=4,100 ly.
M17	Sgr	□	Omega Nebula. Contains the star cluster NGC 6618. Dist=4,900 ly.
M11	Sct	⁘	Wild Duck Cluster. Resembles a globular through binoculars. V-shaped. Dist=5,600 ly.
M16	Ser	□	Eagle Nebula. Requires a telescope of large aperture. Dist=8,150 ly.
M1	Tau	□	Crab Nebula. Remnant from supernova which was visible in 1054. Dist=6,500 ly.
M33	Tri	⬭	Fine face-on spiral galaxy. Requires a large aperture telescope. Dist=2.3 million ly.
M81	UMa	⬭	Beautiful spiral galaxy visible with binoculars. Easy to see in a telescope.
M82	UMa	⬭	Close to M81 but much fainter and smaller.
M27	Vul	✧	Dumbbell Nebula. Large, twin-lobed shape. Most spectacular planetary. Dist=975 ly.

Kern Astronomical Society InfoShare

Since 1956, the Kern Astronomical Society has promoted community awareness of current events in astronomy, and provides a forum for sharing of knowledge and experiences among amateur astronomers. Annual membership is $25.00 which also provides membership in the Amateur Astronomical League, access to their newsletter (Reflector Magazine), and participation in observational programs.

Star Parties and Outreach

The Kern Astronomical Society typically has two Club Star Parties each month depending on the weather. Our Club Parties are held on Saturdays nearest the New Moon. We also host Public Star Parties at various locations around town during April - October. These parties are held on Saturdays nearest the first quarter Moon. In addition, we also host Lunar, Solar, and Planetary viewing for Public Schools. Requests may be directed to our Star Party Coordinator.

Club Equipment

The Kern Astronomical Society has telescopes and accessories (listed below) available for loan to Club Members in good standing. Members are encouraged to borrow the different types of telescopes in stock (especially if you are considering purchasing one). Trying out different sizes and types of telescopes can help you make an informed decision about purchases. If you have a Club telescope in your possession, you will be expected to participate in at least one public star party.

- 6” f/6, 8” f/6, 10” f/5.6, 13” f/4.5 Dobsonian telescopes, Parks Jovian 90, 3 ½” f/13 Maksukov-Cassegrain, 4” f/15 Unitron Refractor
- 8” Solar Filter
- Assorted eyepieces

Privileges and Benefits of Membership in the Kern Astronomical Society

1) Hold an elected position as an Officer or Board Member in the Society
2) Vote in the election process and on business at meetings
3) Go on sponsored field trips to various astronomy related events (i.e. Mt Wilson Observatory, Panamint Springs Dark Sky, etc.)
4) Membership in the Astronomical League which includes subscription to Reflector Magazine
5) Discount for Sky and Telescope Magazine
6) Access/use of club telescopes and related equipment / Help with use of equipment by members
7) You are covered under the Society's insurance at related events

KAS Club Officers/Board Members

President:	Tom Henderson	tomhenderson123@att.net
Vice President:	Diane Franco	dianef02@yahoo.com
Secretary	Rod Guice	stargazer10000@gmail.com
Star Party / Event Coordinator	Darren Bly	dcbly@bak.rr.com
Member at Large	John Hester	jh191623@gmail.com
Member at Large		
Educational Committee Chair		
Educational Youth Ambassador		
Newsletter Editor	Timothy Stoner	desert_enduro@hotmail.com
Webmaster	Ivan Aburto	ivanaburto88@gmail.com

Kern Astronomical Society

New Membership/Renewal 2023 - 2024

Date: _____

Name: _____

Family Members: _____

Address: _____

City, State, Zip: _____

Phone: _____

Email:** _____

My check # _____in the amount of $ _____ is enclosed.

Yearly Membership $25

Make checks payable to: KAS (or) Kern Astronomical Society

You can also mail this form and check to:

Kern Astronomical Society
5501 Stockdale Hwy #10241
Bakersfield, CA 93389

** Please provide the email address where you wish to receive the KAS newsletter (if different than above)

"SYZYGY": _____