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ASTRONOMER'S WORKBOOK

TARGET LIST

JANUARY 2014

QUADRANTID METEOR SHOWER JAN 2-3!

LUNAR PHASES

How many objects and events can you observe this month? Check ☑ each of the boxes provided next to the objects and events you observe!

NEW MOON JANUARY 1 11:14 UT

FIRST QUARTER JANUARY 8 03:39 UT

FULL MOON JANUARY 16 04:52 UT

LAST QUARTER JANUARY 24 05:19 UT

NEW MOON JANUARY 30 21:39 UT

YOUR LOCAL TIME ZONE: _____ (ex: EST = UT –5)

It is important to distinguish your local time from the astronomical standard of **Universal Time (UT)**. Universal Time is the standard by which all observers agree to measure an event. It is also known as Greenwich Meantime (GMT) or Universal Time Coordinated (UTC). Use a time zone chart (http://www.worldtimezone.com/) to find your local time zone and record how many hours + or - from UT 0 (GMT). Add to or subtract from UT times to get the local time for an event.

ASTRONOMICAL EVENTS

Moon At Perigee (closest to Earth) on January 1 at 21h UT and on January 30 at 10h UT.

Moon At Apogee (farthest from Earth) on January 16 at 2h UT.

Earth At Perihelion (closest to Sun) on the January 4 at 12h UT.

CONSTELLATIONS

The following constellations appear at or near the **zenith meridian** (the line running directly north/south in the sky) at 22:00 (10:00pm) **local time** on the first night of the month.

Northern Hemisphere

These constellations appear at or north of the **celestial equator**.

- ☐ Auriga
- ☐ Camelopardalis
- ☐ Orion
- ☐ Perseus
- ☐ Taurus

Southern Hemisphere

These constellations appear at or south of the **celestial equator**.

- ☐ Caelum
- ☐ Columba
- ☐ Dorado
- ☐ Eridanus
- ☐ Fornax
- ☐ Horologium
- ☐ Hydra
- ☐ Lepus
- ☐ Mensa
- ☐ Pictor
- ☐ Reticulum

LUNAR PHASES

Observe and record lunar phases. Sketch the degree of observed phase by shading in the circles provided. Orient the north **lunar limb** to top. Record the date and time of observation in UT.

☐ **Waxing Crescent**
Visible Jan 2-7
Date and Time:
N

☐ **Waning Gibbous**
Visible Jan 17-23
Date and Time:
N

☐ **Waxing Gibbous**
Visible Jan 9-15
Date and Time:
N

☐ **Waning Crescent**
Visible Jan 25-29
Date and Time:
N

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THE CLASSICAL PLANETS

- ☐ **Mercury -** Greatest elongation (18°) evening sky Jan 31 at 10h UT.
- ☐ **Mars -** Rising early morning in Virgo.
- ☐ **Jupiter -** At opposition Jan 5 at 21h UT.
- ☐ **Saturn** - Rising early morning in Libra.
- ☐ **Uranus -** Sets early evening in Pisces.

DWARF PLANETS

- ☐ **Ceres -** Rising early morning in Virgo, magnitude 8.

MESSIER OBJECTS VISIBLE IN THE EVENING SKY

PERSEUS

- ☐ M76 Little Dumbbell
- ☐ M34 Open Cluster

CETUS

- ☐ M77 Galaxy

TAURUS

- ☐ M45 Pleiades Cluster

LEPUS

- ☐ M79 Globular Cluster

AURIGA

- ☐ M38 Star Cluster

TAURUS

- ☐ M1 Crab Nebula

ORION

- ☐ M42 Great Orion Nebula
- ☐ M43 Mairan's Nebula

AURIGA

- ☐ M36 Open Cluster

ORION

- ☐ M78 Reflection Nebula

AURIGA

- ☐ M37 Open Cluster

COMETS

- ☐ **C/2013 R1 (Lovejoy)**
- ☐ **C/2012 X1 (LINEAR)**
- ☐ **C/2013 V3 (Nevski)**

Visit http://cometchasing.skyhound.com/ for finder charts and more information on these and other visible comets.

ASTEROIDS

- ☐ **4 Vesta -** Rising early morning in Virgo, magnitude 7.
- ☐ **2 Pallas -** Transits early morning hours in Hydra, magnitude 8.
- ☐ **3 Juno -** Sets early evening in Aquarius, magnitude 10.

QUADRANTID METEORS ☐

Record each meteor sighting you observe while observing the Quadrantid meteor shower. (ex: 𝍸) If there are multiple observers be sure that each observer keeps record of only the meteors they observe and not what other observers report. Record date and observation start/stop time in UT.

Visit http://www.amsmeteors.org/meteor-showers/meteor-shower-calendar/ for more information on the Quadrantid and other meteor showers.

ADD YOUR OWN TARGET

- ☐ _____
- ☐ _____
- ☐ _____