

## Using the Dark Times Calendars

My main purpose for creating the Dark Times Calendars was to show, in advance, the best times for deep space astronomical observing. Perhaps the biggest difference between a Dark Times Calendar and an ordinary calendar is that the days are separated at noon instead of at midnight. Each night of the calendar, therefore, is shown on a single row. If we do not divide this way, some things can be particularly confusing. For instance, you hear that there will be a big meteor shower on the 18<sup>th</sup> of November. Should you get up early on the 18<sup>th</sup> or stay up late on the 18<sup>th</sup> to see it? Being wrong could mean you'll miss the meteor shower altogether.

The events section of the calendar is meant to show when events (like that big meteor shower) will take place. Unfortunately, at this time, the events section of the calendars is pretty, well, empty. (If anyone is willing to volunteer to help with this, please speak up!)

Essentially, the left side of the calendar shows when the sky will be ...umm..., dark. By dark, I don't mean it will just be night time. I mean that the Moon will not be in the sky and the time of the night is between evening astronomical twilight and morning astronomical twilight. These Dark Times are the best times to view or photograph faint deep space objects. The gray areas of the calendar show when these Dark Times are at a glance.

The left-most column shows the day of the week. The second column shows the date for that particular day, err night! The third column shows when astronomical twilight ends for that date. (It is best to have your scope setup and ready to go by this time!) The fourth column gives the time of night during the PM hours that the Moon will either rise or set. The fifth column gives the time of night during the AM hours that the Moon will either rise or set. The sixth column gives the time that morning astronomical twilight will begin. The seventh column gives the new date, which changes after midnight. The eighth column gives the new day of the week, abbreviated to three two letters.

If the Moon is rising at the given time, the number for the time will have an "R" in front of it. Likewise, if the Moon is setting, the number will have an "S" in front of it. The number gives the time for the event where the right-most two digits are the minutes and any digits left of the right two are the hours in twelve-hour format.

When there is a row that is completely gray and there are no Moon rise or setting times listed, that means that the Moon will not be in the sky during the hours between evening twilight and morning twilight. These are the best times for long observing marathons! If the row is not grayed out and there are no times listed, that means the Moon will be in the sky the entire time! These are the worst times for deep space observing.

All times shown for the Moon and astronomical twilight are accurate for Wilmot, Ohio. I wouldn't expect an error of more than 10 minutes for any location within Ohio.

My source for the time data is the US Naval Observatory website. I have converted the times to twelve hour format and applied Daylight Savings Time when appropriate.

Clear, and dark, skies!

Phil