Here’s a question for which almost nobody you ask will know the answer -- even quite well-educated people! WHAT ARE the TROPICS, anyway? Yeah, we know it’s the zone on the earth between the Tropic of Cancer (at 23-1/2 degrees north of the equator) and the Tropic of Capricorn (23-1/2 degrees south latitude); but WHY is that zone specifically demarcated as the tropics? What’s its significance?

And here’s the very simple ANSWER (so you’ll be among the few people on earth who know this, at least until this book becomes a wildly popular household item!): It’s the zone where THE SUN CAN BE DIRECTLY OVERHEAD. Everywhere in the tropics, the sun shines straight down from the zenith point (which is the point in the sky directly overhead) twice a year -- and at each of the two limits of that zone (the 23-1/2 degree latitude lines named above), the sun’s overhead just once a year -- at the exact moments of the solstices (June for the Tropic of Cancer and December for the Tropic of Capricorn). NOWHERE OUTSIDE THE TROPICS does the sun EVER appear directly overhead.

So this is kind of consistent with what you DID already know and think about the tropics -- that it’s a HOT area. We know that when the sun’s high in the sky, things tend to get hot --radiation striking surface closer to right angle.

Now for some fun and interesting astronomical stuff that’s related to this. Why are those tropic latitude limit lines named for those two zodiac constellations (Cancer and Capricorn)? Well, the sun’s always in front of some stars. At any time of year there are certain constellations you can’t see at night because they’re behind the sun in the daytime at that season. In fact, this is what the ZODIAC is: the band of constellations around the sky that the sun gets in front of as we on the earth move around the sun during the course of the year. The idea is that around the time of the June solstice, the sun’s in front of constellation Cancer (from WHEREVER on the earth you happen to be located) when the sun’s overhead at the Tropic of Cancer; and it’s in front of Capricorn in December when it’s overhead at the Tropic of Capricorn. (Actually, things have drifted off by about one zodiac constellation during the couple of thousand years since this system and these names were established -- due to the ~26,000-year wobble in the earth’s axis, called precession, which we’ll talk more about in awhile.)

So, note: You DON'T SEE the constellation of your zodiac sign during the month of your birth -- because that’s when the sun is IN (or IN FRONT OF, ... IN THE WAY OF) that constellation! ... ZODiacle -- like ZOOlogy: animals!