

The Reason For Seasons: The Great Cosmic Megagalactic Trip Without Moving in Your Chair by Linda Allison

" You think you are sitting still,

in fact you're not. In fact you are on the great cosmic mega-galactic trip without moving from your chair. You are turning a giant somersault every twenty-four hours and spinning at about 1,000 miles per hour, (1)

and circling the sun at the rate of 6,500 miles per hour. (2)

You and the rest of the solar system are traveling toward the Star Vega at 12 miles per second,

And gyrating around the center of the Milky Way at 150 miles per second,

And you thought you were sitting still! All that commotion and we still haven't talked about the reason for seasons.

There are two. One of them is the motion (the part about circling the sun at 6,500 miles per hour) The other one is very peculiar.

The other reason: The Earth travels round the sun flopped over to one side, so the sun's light strikes it in a kind of lopsided way. Since earliest times, we've been wheeling round the sun at this funny tilt. What's even more amazing are the millions of ways Earth life has learned to live with this silly slanted dance and the fitful fall of sunshine. ....

**Spring** is when the hours of light begin to outnumber the hours of night and the Earth begins to warm. It's the time of the great awakening. Plants spring to life with new green. The seven sisters (Pleiades) appear in the sky in Northwest Brazil, signaling the Tukano people that it's time to plant. Insects appear. Fish spawn. Amphibians lay their eggs. It's a good time to be born. Spring begins March 21 (vernal equinox -- the day with equal dark) It lasts 92 days, 20 hours. It ends June 21.

**Summer:** At last those shortened nights and extra hours of light begin to be felt. Temperatures rise. It's time to kick off your shoes and think about vacation. It's ice-cream weather and the 4<sup>th</sup> of July, the date that marks the aphelion -- the quirk in the Earth's trip that gives the Northern hemisphere four extra days of summer. Blossoms turn to fruit. The harvest begins. Summer begins June 21. (Summer solstice -- the longest day) It lasts 93 days, 15 hours. It ends September 23.

**Autumn:** Days shrink into longer nights. The purple martins take their cue and start their flight from Mississippi to Brazil. Weeds make a quick come-back,

taking over recently harvested fields. It's a good time for insect caterpillars-until the first frost. Kids in the Northern Hemisphere "go back to school," while kids "down under" leave their coats behind and think about what to do come summer. Autumn begins September 23 (autumnal equinox) It lasts 89 days, 19 hours. It ends December 21.

**Winter:** The time of the longest night and the least light. The slowest season in the growing world. The food supply dwindles. It is a harsh time for creatures in cold places. Fish swim deep into the warm under parts of ponds. Insects vanish -- to hibernate, or wait for spring as eggs. Everything sleeps. Winter begins December 21. (Winter solstice- the longest night) It lasts 89 days, 1 hour. It ends March 21.

Read the excerpt above and answer the following

1. Identify the period of time (1) refers to \_\_\_\_\_
2. Identify the period of time (2) refers to \_\_\_\_\_
3. What season are we in? \_\_\_\_\_
4. What characterizes this season? \_\_\_\_\_

5. What is the significance of March 21?  
\_\_\_\_\_  
\_\_\_\_\_

6. What season is the longest?  
Why?  
\_\_\_\_\_

7. What is the significance of July 4<sup>th</sup>?  
\_\_\_\_\_

8. What are the dates of the solstices?

9. What are the dates of the equinoxes?

10. How are the solstices and equinoxes related to the seasons?

11. How do we know this is written for the United States population?

12. On the back of this paper draw the Earth's path around the sun. Label the solstices and equinoxes.

(see p 760)