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Spring on the Mermaid

Declination: Zero!

While much of the United States digs out from under a blanket of late winter snow, spring has sprung on the Mermaid. Under azure blue skies filled with puffy clouds and gentle east winds, we survey our way into the new season.

The vernal equinox (vernal meaning "spring" and equinox meaning "equal nights") is when daytime is exactly as long as the night. There is another one in the fall. If we're still out here at that time, I'll be sure to write to you again. This is the one day of the year in which the sun makes a northerly crossing of the Equator. This means that for one instant, the sun will be directly overhead on the Equator at a predicted time and location. Its declination (angular distance from the celestial equator) will be zero degrees. Let's look into that.

The resource needed is a book called the Nautical Almanac. It's a required publication carried on all commercial vessels. Published by a number of sources, it amounts to a directory of the stars, sun, moon and planets in our solar system and their location addresses at any point in time and for any location on earth during the year. Navigators use this information when they make celestial observations of these bodies. Certainly Fred Noonan used it when he and Amelia Earhart navigated their way around the world.

For the sun at equinox, we know that its location is on the Equator, but when and where on the Equator? We have to go to the Nautical Almanac.

Open the book to any page. On the right hand page is a column for the sun. The information is tabulated for each day and hour of the year. The equivalent of latitude for the sun is called declination. Declination changes with time due to the earth's orbit around the sun and the spinning on its axis. Go to the pages for the early part of the year. The sun's declination is South in January, February

and March. But it is getting less south each day. So we look for the day of the crossing, and it occurs in March. Now observe that declination changes from south to north on March 20th. It occurs exactly between the hours of 10 and 11 Greenwich Mean Time. So we can see that at 1030 GMT on March 20 the equinox occurs. In local time on the Mermaid (-11), that's March 19th at 2330, just before midnight tonight.

But wait there's more. What about where it occurs? It is only on the Equator for an instant

as it moves northward. Back to the Nautical Almanac, back to the page for March 20th, back to the column for the sun, back to the hours 10 and 11. There is an equivalent for the sun's longitude call GHA, Greenwich Hour Angle. This is the angle starting at Greenwich that sweeps westward, counterclockwise looking down from the North Pole. GHA is tabulated for each hour. We can see at 10 GMT, GHA is 328 degrees 8.8 minutes, 328° 08.8'. At 11 GMT, GHA has increased to 343° 09.0'. By simple mathematical interpolation, the GHA for 1030 would be exactly in the middle, 335° 38.9'. A GHA angle of this amount is the same as measuring longitude east or west. In this case, we would measure it to the



Marika Lorraine

Plan of the Day March 20, 2017

0900 Possible ISS Pass, Bridge.

1000 Daily Progress Meeting: Ops Ctr.

continued...

We are VERY lucky to have

Louise Mnich managing contracts, negotiations, and legal matters on this expedition. She was born in Los Angeles, a third generation native Southern Californian with family roots back to 1883. She earned a BA in Speech Communications before starting law school and her military career. She was commissioned an Ensign in 1977, graduated from law school and passed the bar the following year, then started Naval Justice School in Newport, Rhode Island.

One of only 5 women in her class, Louise earned a number of "firsts." She was the first woman on board USS *Sacramento*, qualifying as Junior Officer of the Deck. She was the first female officer to be assigned to the Naval Shipyard Puget Sound. She moved on to the Philippines in 1982 where she pioneered the concept of a mobile trial team to deployed ships. She became the first woman assigned to USS *Carl Vinson*, then the Navy's

newest carrier, operating in the South China Sea. She left active duty in 1985 and retired from the Reserves in 2000 as Captain.

In the Reserves she was the first women to work in the Operational Law area, providing legal advice to senior commanders in planning military operations worldwide. She supported the Vice Admiral leading Plans, Policy and Operations in the Pentagon; in addition to participating in hosting the

Russians in joint Navy talks, she briefed the Chief of Naval Operations while filling in for the active duty JAG captain.

As a civilian she worked for Rockwell International and Boeing, and was the first (and to date only) woman to serve as General Counsel for Boeing Commercial Airplanes, the largest Boeing business unit. She retired in 2008.

Louise is married to a former Naval F-14 aviator and current Boeing test pilot. She has two grown sons, one of whom is a Navy SEAL, and a much beloved two-year old

granddaughter. She has a private pilot's license, is an avid scuba diver and hiker; and loves to travel, any time, any where, including 6 hours back-seat time in F-5, F-14 and F/A-18 aircraft.

Louise comes from a long line of freedom loving American patriots, beginning with a Captain in the Connecticut Militia during the Revolutionary War; three Union soldiers who fought in the Civil War; a grandfather in WWI; and her father in WWII.



west of Greenwich 24° 21.1'W longitude. Where's that?

This happens to be a point on the Equator located in the middle of the Atlantic Ocean. What is near it?

UT	SUN	
	GHA	Dec
d h	° /	° /
20 00	178 07.0	S 0 10.3
01	193 07.1	09.4
02	208 07.3	08.4
03	223 07.5	. . 07.4
04	238 07.7	06.4
05	253 07.9	05.4
06	268 08.1	S 0 04.4
07	283 08.2	03.4
08	298 08.4	02.4
M 09	313 08.6	. 01.5
O 10	328 08.8	S 00.5
N 11	343 09.0	N 00.5
D 12	358 09.2	N 0 01.5
A 13	13 09.4	02.5
Y 14	28 09.5	03.5
15	43 09.7	. . 04.5

It's about equal distant from two prominent points of land: the eastern elbow of Brazil, close to Natal, and the western elbow of Africa, close to Dakar. Does that ring a bell? Those were the starting and ending points for Amelia Earhart's crossing of the Atlantic on her Around the World Flight attempt. Small world, isn't it?

— Spence King

MERMAID MARCH MADNESS

Exclusive Passages Updates!

LATEST RESULTS: Round Two has "In absentia" Alan moving into first place with a cool 53 points. Close astern is Marika with 51. Cap'n Joe is manning After Steering with 28.

Thought of the Day

Feel free to name your first dog anything you want, but remember that it will be the answer to security questions for the rest of your life.

MERMAID CLASSIFIEDS

PERSONALS 100

THERE IS NO TRUTH to the rumor that *Mermaid* will be dropping us in Australia on the way to Singapore. However, the current exchange rate is US\$1 = AUD\$1.30.

WANTED 200

STORIES for *Meridian Passages*. Sea, land, or air stories welcome. Dave 4031.

LESSONS LEARNED, lessons not learned, lessons learned and forgotten, lessons ignored. For *EDEE Final Report*. Spence 4051.

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LOST & FOUND 500

Place New Ads by Friday – ed.