Karel Hujer: *Where East Meets West*

It is neither in the Middle East nor in mid-space, where Apollo recently linked-up with Soyuz and Western and Eastern astronauts shook hands, but it is at Greenwich standard zero meridian where East meets West There, facing north in the Transit Room of the old Royal Observatory in England, you may place your left foot west and your right foot east of Greenwich.

The International Symposium celebrating the Tercentenary of the Royal Greenwich Observatory took place the same week of July that the dramatic gesture in outer space between the USA and USSR occurred. It is not without parallel in history. In 1675, when King Charles II issued a decree ordering the foundation of the Royal Observatory, astronomy was still considered a craze. The first Astronomer Royal, Rev. John Flamsteed, was an amateur and a preacher, as were the third and fourth Astronomers Royal. The first two government observatories in Greenwich and Paris were established almost simultaneously, not for the love of the celestial science but for the dire need of finding longitude and improving navigation especially while out on the open sea, out of sight of land. The race then was between England and France as to who would take mastery of the world sea lanes.

Just as today in the background of the towering expensive Apollo/Soyuz stunt representing neither a technological breakthrough nor revelation of new cosmic mysteries, it is but a constant competition between the two great powers at this stage in history, the U.S. and U.S.S.R., the race now be ing for the conquest of space in the third dimension. Three hundred years ago the struggle was between the continental power, France, and the oncoming maritime power, England, to determine who was destined to "rule the waves" in two dimensions, on the surface of the ocean. The Spanish empire was in advanced decline and Germany still comprised of many disunited principalities. Expanding commerce needed much more accurate determination of a ship's position at sea for its safety as it carried precious cargo from the constantly expanding colonial empires. Geographic latitude was familiar to the ancient Greeks but longitude was far more evasive.

The recent Tercentenary symposium at the National Maritime Museum in Greenwich brought together historians of science from 16 countries and was a gala affair. It was honored by the presence of British royalty during the unveiling of the monument to the first Astronomer Royal, Rev. John Flamsteed, at the new site of the observatory at Herstmonceux, near Hastings, while the zero meridan still remains at its original location in Greenwich. The sumptuous initial reception took place in the National Maritime Museum. The original historical Royal Observatory on the nearby hilltop is now part of the museum complex. Flamsteed House with its Octagon Room, erected by Sir Christopher Wren, belongs to the jewels of architecture in England.

For the writer it was an especially memorable experience having also been present at the quarter millenium anniversary when, on July 26, 1925, the last King-Emperor George V and Queen Mary honored the celebration by their visit to the Octagon Room of Flamsteed House. Then the Astronomer Royal, Sir Frank Dyson, had extended an invitation to me, a young Fellow of the Royal Astronomical Society of London. This year that Society together with the Royal Society held a magnificent reception in the premises of the latter on the Mall in London.

The agenda of the symposium dealt with a panoramic view of three hundred years of astronomy with special relation to the role of the Royal Greenwich Observatory. With the problem of longitude the principal reason for its foundation, this was the dominating topic of various papers. The observatory was in existence for more than 30 years when in 1707 the Royal Navy under the command of Sir Cloudesley Shovel, returning from a victorious campaign against the "pirates" in the Mediterranean sea and approaching England, thought they were safely west of the Brittany peninsula. Instead, the fleet piled up on the rocks of Scilly Islands and 2,000 seamen were drowned, including Sir Cloudesley. This evidently prompted the foundation of the Board of Longitude which offered 20,000 pounds of sterling to anyone finding a device determining the longitude to 30 minutes of arc on the surface of the sea for a ship when six weeks out of sight of land. This was an enormous sum, today equivalent to one million dollars, when the annual salary of the Astronomer Royal was 100 pounds sterling a year.

For fifty years the offer remained untouched, the butt of every satirist. It was destined that a certain John Harrison, originally a carpenter, then a clockmaker, constructed the first spring chronometer, which unlike the pendulum clock, could stand all the rocking of the boat, carrying along Greenwich time. Geographic longitude is simply the difference between Greenwich time and local time easily determinable by the position of the sun. John Harrison met all the Board of Longitude's requirements but to the learned members it was embarrassing to recognize the results of a humble clockmaker. The prize winning specimen in the Museum is today worth about three million dollars.

The Board continued its desperate delaying action against John Harrison, then 78 years old, when King George III heard about the affair and roared out, "By God, Harrison, I'll see you righted!" The King himself checked the rate of Harrison's chronometer in his private observatory at Kew and found that ten weeks later it had picked up only a 4½ second error, far within the conditions required by the Board.

The finding of longitude is inevitably closely tied up with the location of zero meridian of all places in Greenwich and its Universal Time. Nationalistic rivalry and pride finally set aside, it was purely pragmatic reason that over 70% of commercial ships used the Greenwich Nautical Almanac. An international conference first in Rome 1883, then in Washington, D.C., 1884 voted for Greenwich meridian, where at Airy transit circle in the old Royal Observatory you can stand at the great divide now indicated on all maps as standard Greenwich meridian.

The symposium had an inspiring finale in Westminster Abbey with Evensong celebrating the Tercentenary of the Royal Greenwich Observatory. Sir Bernard Lovell, Director of Jodrell Bank Radio Astronomy Laboratory, gave a sermon on the vista of 300 years of astronomy, its progress unparalled in the history of civilization.

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