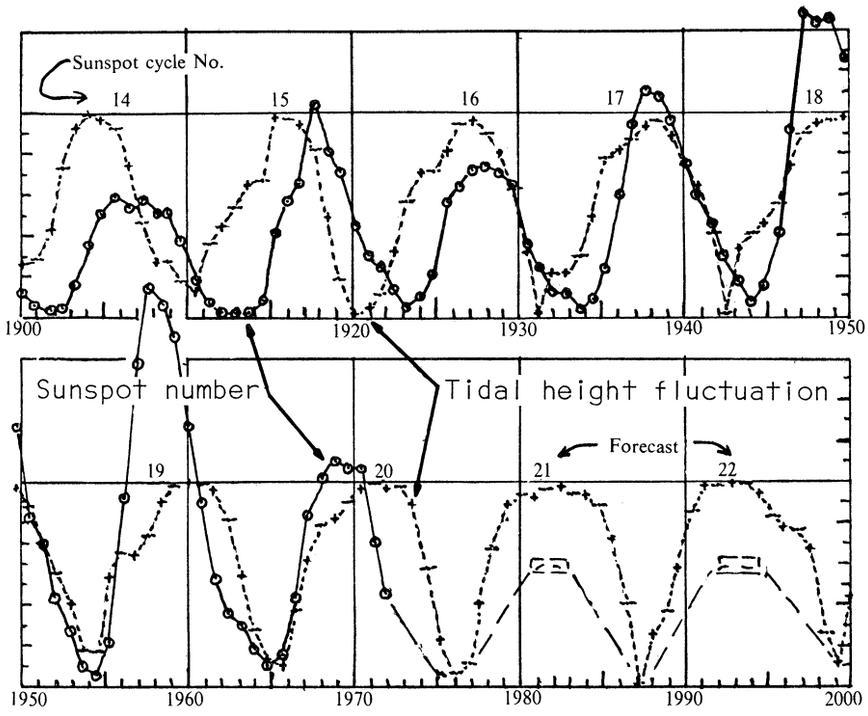

Wood/Nature

Solar tidal fluctuations (up or down) compared to sunspot numbers since 1900.

casts stressing the desirability of prior consent on the part of the receiving state.

The U.N. General Assembly voted 101 to 1 to "consider it necessary to elaborate principles governing the use by states of artificial earth satellites for direct television broadcasting with a view to concluding an international agreement or agreements." The General Assembly asked the Outer Space Committee of the U.N. to elaborate such principles.

The Soviet Union introduced a treaty that would, among other things, allow a state to take all measures to prevent so-called illegal broadcasting from such satellites (even to destroying the transmitting satellite). The Soviet intention was for this treaty to become the primary basis for any treaty ultimately signed. The resolution calling for elaboration of "principles," however, in effect denied the Soviet Union this strategy.

George Bush, U.S. ambassador to the U.N., in speaking against such curbs, noted that the United States attaches a cardinal importance to its "strong, 200-year-old belief in the free exchange of information and ideas." He also questioned whether such restraints would not be in violation of the Universal Declaration of Human Rights (a U.N. document) which embraces the freedom of information. No such restraints, for example, are placed on radio transmissions—probably because finding and destroying all the transmitters would be a mammoth task. □

Do tugs of the planets affect the sun's cycles?

The influence of the sun on the planets that go around it determines the conditions found on them. Most of the scientific literature on the sun assumes that there is no reciprocity: The planets have no influence on the various upheavals, sunspots and flares, that characterize the surface appearance of the sun. These are regarded as caused by occurrences deep within the sun.

In the Nov. 10 NATURE R. K. Wood of the University of Colorado points out an interesting relationship between the 11-year cycle of sunspots and a known influence of the planets on the sun, the solar tides. Just as the moon and the sun raise tides on the earth so the planets raise tides on the sun.

The tidal influence of a planet depends both on its size and its distance. There are four planets that contribute appreciable effects to the solar tides. Taking the earth's contribution as one, the relative contribution of each of the others is: Mercury 1.15, Venus 2.17 and Jupiter 2.28. The remaining five planets make only negligible contributions. When Venus and earth are in line (conjunction or opposition), they cause a solar tide 50 percent greater than the largest caused by Jupiter. When Venus, earth and Jupiter are all in line, the tidal effects of the three planets add together at any point on the sun. In his calculations Wood left out the influence of Mercury because that planet's tidal effect has a three-month cycle, and so it would have little effect on the 11-year sunspot cycle.

Wood plotted the tidal height fluctuations since 1750 for each interval between dates of earth-Venus conjunction and earth-Venus opposition against the smoothed monthly number of sunspots for the center of each interval. The result is graphs comparing the two data that seem to show a correlation between peak times of tidal variation (rise or fall) and peak numbers of sunspots.

There is a small difference between tidal maxima and sunspot peaks, the error of prediction of the peaks, as Wood calls it, which seems to vary according to a 170- or 180-year cycle.

Assuming that this cycle in the error of peak prediction is real, Wood publishes predictions of the sunspot peak, derived from computation of the solar tides, for the next 130 years (12 sunspot cycles). But he does not suggest a mechanism whereby the tides could influence the production of sunspots. □

Poor nutrition: How is the fetus affected?

The quest for evidence about the effects of a prospective mother's diet on the mental development of her child is one of the most active interests of nutrition scientists. So far evidence is not only inconclusive but contradictory.

During the past few years, for example, investigators have determined that children born to malnourished mothers in Chile had fewer brain cells than control children. In Guatemala, giving protein supplements to women increased the birth weight of their offspring but did not appear to influence their intelligence.

Now, in the Nov. 17 SCIENCE, Zena Stein and colleagues at the Columbia University School of Public Health and Administrative Medicine report that young people who experienced the severe famine in Holland from 1944 to 1945 prenatally have not suffered loss of intelligence because of it.

The Columbia team studied 2,000 19-year-old subjects from seven cities in Holland. The subjects' intelligence was compared with that of 19-year-olds in 11 Dutch cities where the famine had not hit. The investigators found no comparable difference in intelligence between the two groups. They admit, though, that their results should be viewed with caution. For example, they compared subjects from cities that differed not only in famine experiences but also in size, religion and occupations. There is the question of whether the intelligence criteria they used (data from military induction exams) are accurate. Also, they looked at the effects