

PtyS 105 → NATS 102, A Remarkable Course T. Gehrels

Professor Sonett originated the course "Universe and Humanity, Origin and Destiny" in the 1970s. Most of our professors have taught it, most of our graduate students have TA'd it, and an estimated 20,000 students attended it with us thus far. As PtyS 105 it was an elective, but Professor Levy arranged, after he became Dean, for it to become a part of the required University courses for undergraduate non-science majors, NATS 102. It is a remarkable course, which deals not only with planetary science, it also teaches a view of the world, as Sonett intended. I changed "Destiny" into "Future," because it is also interesting to study what we can **do** about the future.

So we overview the earth and other planets, stars and galaxies, and humanity with its problems. Sonett's view of the world is then based on observations of nature, i.e. on natural laws, and such observations tend to be made nearly the same by observers anywhere. The result is that humanity can derive a common worldview, with solutions to global problems.

As scholars we have an obligation to teach such a view of the world and to act on any solutions that lie within our expertise. Physicist Victor Weisskopf wrote: "Because of the central position of science in our civilization, physicists should be deeply concerned with the involvement of science in worldwide cultural and political affairs." Physicist Vikram Sarabhai initiated educational television for the villages of India, including family planning. The result was that the average number of children per family in India dropped from 6 to 3. The drop is similarly seen in other countries and that is the best news for the future of the world.

President Eisenhower warned in 1961 that the military-industrial complex of the U.S. is becoming a menace to democratic decision making, and this has become much more serious and globally spread since his time. As our NATS-102 is a required course, the future leaders of business are among the students. So we discuss a new focus for world trade and finance, namely to aim at diminishing poverty by bringing the destitute more into commerce and consumption. The best way to stimulate an economy is from the bottom up rather than from the top down in any case. Extreme poverty is not only unfair, it is also dangerous for peace, because young people in frustrating conditions are likely to volunteer for terrorism. A new type of "street terrorism" is foreseen in tropical climates, with simple weapons of knives, rocks and fire.

In Mumbai, Shaheen Mistri initiated a concept called "Akanksha," "aspirations," such that within a few years he and his small staff could create 30 Centers of 60 destitute children each. Their Website (www.akanksha.org/index1.htm) is elegantly written and illustrated. An Akanksha teacher fetches her or his children from their slum every morning and takes them to existing premises such as in an office or public building, which lend these spaces free of charge. There are two salaried teachers, with volunteers supplementing. Each Akanksha child gets an education, and quality time away from the harshness of the slum, at a cost of only \$0.23 per day.

With the America-India and the Gorbachev Foundations we have begun promotion for additional Centers elsewhere. This is to describe the plan, suggest participation by teachers, ask for volunteers and for available space, and approach local industrial authorities with the question if they are willing to become financial sponsors. The sponsors are encouraged to get to know these special students - who will do well in life - with a view on supporting them through college and eventually employing them. Our NATS students contribute in the discussion of these plans, while some are set a-dreaming of living abroad for some time as volunteers, perhaps as guest of Akanksha people, who may come on a visit here. It is a world of aspirations.

