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NASA PHYSICIST URGES SOLAR POWER USE

Calling for greater reliance on the sun as an energy alternative, a noted NASA physicist from the Goddard Space Flight Center today stressed the importance of precise solar radiation measurements in the planning of solar energy systems.

Dr. Matthew P. Thekaekara, 61, a solar physicist at NASA's Greenbelt, Md., scientific laboratory, spoke at the opening session of the 1975 Congress of the International Solar Energy Society, meeting this week at the University of California at Los Angeles. He praised the society for its goal of "using today's solar energy for today's needs."

"A wide vista of problems, policies and programs (regarding solar energy) will claim our attention," Thekaekara told the energy congress. "It is but natural to inquire at the outset, 'How much of this resource...is available to us at a given time and place? How do we measure it?'"

The congress, which has grown from 150 participants in 1970 to about 2,000 this year, heard Thekaekara point out that, while solar energy is our most abundant and inexhaustive power source, the systems to harness the sun's power are expensive and must be made economically competitive. It is in this regard that measurements of solar radiation become important.

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"If the systems are not built for the available supply of solar energy, they will either be unable to deliver the required energy or cost unnecessary outlay of capital... Optimum sites have to be chosen for the proposed megawatt solar power stations, sites with high irradiance, small cloud cover and few days of continuous cloud duration."

Sites in Arizona and New Mexico are likely targets for solar power stations.

"Measurement of solar irradiance," Thekaekara continued, "has been made for many years at a large number of stations throughout the world. The principal objective in these measurements was weather prediction and climate modelling.

"Solar energy conversion has not been a major application area for insolation data, and is not surprising that data gathered for other purposes are not those most needed in heliotechnology."

Thekaekara's lecture on solar radiation measurements came in the wake of a new national energy development plan announced June 30 by the Energy Research and Development Administration (ERDA). The ERDA report urged that Congress give a higher priority to the development of solar energy, and recommended that outlays for solar research in the next fiscal year be raised by $19 million to a total of $57 million.

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"The energy crisis loomed on the horizon rather suddenly," Thekaekara said. "It made the industrialized nations realize that the prodigal waste of fuels stored from geologic times cannot continue. The energy problem is coupled with the environmental problem. Solar energy is the only non-polluting form of energy."

Thekaekara is a noted authority in the field of solar physics. In 1970, he won acclaim for his recalculation of the solar constant -- the measureable amount of energy that travels from the sun to the earth. He made this rather startling discovery while serving as the principal investigator for Goddard's 1967 Galileo experiment, conducted aboard a specially equipped aircraft at an altitude of 38,000 feet.

Before coming to Goddard in 1964, Thekaekara spent seven years on the faculty of Georgetown University, Washington, D.C. He was born in 1914 in India and came to the United States in 1952. In addition to his scientific work, Thekaekara is also a Roman Catholic priest and the author of many books and articles on scientific, religious and social subjects.

In addition to Thekaekara, nearly 300 other solar energy experts will deliver papers to the solar energy congress.

The congress has added sessions this year devoted primarily to nontechnical issues such as economic, social, instutional, industrial, architectural and policy concerns related to solar energy. There is also a special solar equipment exposition.

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The International Solar Energy Society was founded in 1954 and has expanded to 55 participating member nations. The society serves as a center for information on research and development in solar energy utilization, and seeks to provide a world forum for active consideration of the uses of solar energy.

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