Charles Townes wins 2005 Templeton Prize

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Charles Townes, the Nobel laureate whose inventions include the maser and laser and who has spent decades as a leading advocate for the convergence of science and religion, has won the 2005 Templeton Prize. The prize, valued at more than $1.5 million, was announced today at a news conference at the Church Center for the United Nations in New York.
Townes, 89, secured his place in the pantheon of great 20th-century scientists through his investigations into the properties of microwaves which resulted first in the maser, a device which amplifies electromagnetic waves, and later his co-invention of the laser, which amplifies and directs light waves into parallel direct beams.

His research, for which he shared the Nobel Prize in Physics in 1964, opened the door for an astonishing array of inventions and discoveries now in common use throughout the world in medicine, telecommunications, electronics, computers, and other areas.

It was the 1966 publication of his seminal article, “The Convergence of Science and Religion” in the IBM journal THINK, however, that established Townes as a unique voice - especially among scientists - that sought commonality between the two disciplines. Long before the concept of a relationship between scientific and theological inquiry became an accepted arena of investigation, his nonconformist viewpoint jumpstarted a movement that until then few had considered and even fewer comprehended. So rare was such a viewpoint at the time that Townes admitted in the paper that his position would be considered by many in both camps to be “extreme.” Nonetheless, he proposed, “their

differences are largely superficial, and…the two become almost indistinguishable if we look at the real nature of each."

The article was generated from a talk delivered by Townes in 1964 before a congregation at New York's famed Riverside Church, known for its embrace of groundbreaking perspectives on philosophy, theology and social activism.

The Templeton Prize for Progress Toward Research or Discoveries about Spiritual Realities was founded in 1972 by pioneering global investor and philanthropist Sir John Templeton. Given each year to a living person to encourage and honor those who advance knowledge in spiritual matters and valued at 795,000 pounds sterling, the Templeton Prize is the world's best known religion prize and the largest annual monetary prize given to an individual. The prize's monetary value is in keeping with Sir John's stipulation that it always be worth more than the Nobel Prizes to underscore his belief that research and advances in spiritual discoveries can be quantifiably more significant than those recognized by the Nobels.

The Duke of Edinburgh will award the prize to Townes in a private ceremony at Buckingham Palace on May 4th. Townes says he intends to give a major portion of the prize money to Furman University, with substantial amounts to also go to the Pacific School of Religion, the Center for Theology and the Natural Sciences, the Berkeley Ecumenical Chaplaincy to the Homeless, and the First Congregational Church of Berkeley.

In remarks prepared for the news conference, Townes said, "Science and religion have had a long history of interesting interaction. But when I was younger, that interaction did not seem like a very healthy one."

Townes, Professor in the Graduate School at the University of California

at Berkeley, noted that, as a graduate student at the California Institute of Technology, the professor directing his research "jumped on me for being religiously oriented." After the THINK article was reprinted in The Technology Review, published by the Massachusetts Institute of Technology, the journal's editor received a letter from a prominent alumnus who threatened to have nothing more to do with MIT if it ever again printed anything like it on religion.

Rather than being dampened by such hostility, Townes said it only further stoked his interest, a burning issue he continues to aggressively examine in books, journals and lectures at venues ranging from UNESCO to the world's major institutes of higher learning. "I believe there is no long-range question more important than the purpose and meaning of our lives and our universe," Townes said in his remarks, noting that the Templeton Prize founder had been particularly instrumental in that work. "Sir John has very much stimulated its thoughtful consideration, particularly encouraging open and useful discussion of spirituality and the meaning of life by scientists."

Charles Hard Townes was born in Greenville, South Carolina in 1915 to Ellen and Henry Townes, an attorney. Raised in a Baptist household that embraced an open-minded approach to biblical interpretation, Townes received a B.A. in modern languages and a B.S. in physics summa cum laude from Furman University in Greenville when he was 19. Two years later, he received an M.A. in physics from Duke and, in 1939, a Ph.D. in physics from the California Institute of Technology with a thesis on isotope separation and nuclear spins.

That same year, Townes became a member of the technical staff at Bell Labs, the powerhouse of modern technology that produced such advances as the transistor, solar cells, and fiber optics, where he specialized in microwave generation, vacuum tubes, and solid-state physics. During World War II, he helped develop radar systems that

effectively performed in the humid conditions of the Pacific Theater.

After the war, he became associate professor of physics at Columbia University and met Arthur L. Schawlow, who had come to the university on a fellowship and became Townes' research assistant. The two would eventually combine their energies (and, coincidentally, become brothers-in-law) to make major advances in the field of microwave spectroscopy, including designing masers and lasers in the 1950s.

Townes often cites his discovery of the principles of the maser - an insight that suddenly occurred to him as he sat on a park bench in Washington, D.C. in 1951 - as a "revelation" as real as any revelation described in the scriptures, and as a striking example of the interplay of "how" and "why" that both science and religion must recognize.

In nominating Townes to the international, interfaith panel of nine judges that awards the prize, David Shi, president of Furman University, wrote, "He points out that both scientists and theologians seek truth that transcends current human understanding, and because both are human perspectives trying to explain and to find meaning in the universe, both are fraught with uncertainty. Scientists propose hypotheses from postulates, from ideas that ultimately cannot be proven. Thus, like religion, science builds on a form of faith."

Shi added, "Charles Townes helped to create and sustain the dialogue between science and theology. Thus he has made a profound contribution to the world's progress in understanding - and embracing - the wonder of God's creation."

Townes, who became an Officer of the French Legion of Honor in 1990, is also the recipient of the Niels Bohr International Gold Medal and nearly 100 other honors and awards, and holds honorary degrees from more than 25 universities. During the administration of Ronald Reagan,

he served as a member of the Committee on the Contributions of the Behavioral and Social Sciences to the Prevention of Nuclear War and, as chairman of Reagan's commission on the MX missile, helped convince the president to reject widespread placement of that weapon.

Most recently, Townes has been a champion of optical searches for extraterrestrial intelligence, using methods he first proposed in a paper in the journal Nature in 1961, one year after scientists had launched the first search for radio transmissions from distant solar systems. His current work uses lasers to help combine images from distant telescopes. Townes' most recent book, How the Laser Happened: Adventures of a Scientist, was published in 1999 to wide acclaim.

Townes and his wife of 63 years, the former Frances H. Brown, live in Berkeley, California. They are the parents of four daughters and six grandchildren.

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