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FACT SHEET – REVEREND PROFESSOR DR. MICHAEL (MICHAŁ) HELLER

March 12, 1936: Michał Heller is born in Tarnow, Poland, to Zofia, a teacher, and Kaziemierz Heller, an electrical and mechanical engineer who is also a painter and is well-versed in several languages. The Heller home includes Michał Heller's four sisters.

September 1939: With the help of colleagues, Kaziemierz Heller, who holds a critical position in a chemical factory near Tarnow, sabotages the factory to keep it out of the hands of approaching German troops. He escapes with his family to Lvov, now part of Ukraine, but then a former part of Poland within the control of the Soviet Union.

1940: After a few months in Lvov, the Heller family is awakened one morning and taken to a "special train" by Soviet soldiers. Acting under orders of Stalin, the authorities deport approximately one million Poles – including the Heller family – to Siberia to serve as a labor force to log the forests. A deeply religious family, the Hellers rely on the strength and solace of religion to help survive the extreme conditions.

1944: As German soldiers enter deep into Soviet territory, Stalin fears that Germans who had lived along the Volga River since the time of Catherine the Great in the late 18th century might link forces with invading troops. To thwart any such possibility, Stalin forces the "Volga Germans" to Siberia. As a counterweight, some exiled to Siberia earlier – including the Heller family – are taken to the Volga region. The Hellers settle near the city of Saratov in southern Russia.

1946: Among the spoils of war, Poland becomes a satellite of the Soviet Union, the eastern part of Poland (including Lvov) belongs to Russia, and part of eastern Germany becomes Poland. Many Poles – including the Heller family – deported previously to various parts of Russia now are transferred to western Poland in an effort to enhance the Polish population of the former German territory. The family resettles back in Tarnow.

Michał Heller, now ten years old, gains insights into religion as well as mathematics and physics listening to conversations of his father, family friends, and other guests in the Heller home. His father often speaks of a great need to combine religion and science. Determined to pursue important things in his life, the young Heller draws a natural conclusion that these two disciplines are among those important things and that both will be part of his life. This sets his path to both the priesthood and academia.

1946-53: Heller attends primary and secondary schools in Tarnow, enjoying studies and his classmates, but has an aversion to schools.

1953: Upon completion of secondary school, he enters the diocesan seminary in Tarnow. This step toward priesthood leaves his father less than happy as Michał is the last male heir of the family name.

1959: Completing philosophy and theology studies, he earns a master of theology degree from the Catholic University of Lublin in Poland. He is ordained a priest in April.

1959-60: Following ordination, he is assigned to a large parish centered in the small town of Ropczyce, about 30 miles east of Tarnow. Communist authorities, whose main tasks include making life hard for Christian believers, ensure that the new priest's time in the parish is painful. Following one Sunday sermon, local authorities interrogate him at length in a Communist Party building. Ironically, the building was once the family home of his grandfather, a high Austrian official in the region prior to World War I, and the interrogation room was his parlour.

1960: Heller begins further studies at Catholic University in Lublin, at the time the only university in Poland at which a priest could study openly. Although he had long desired to study physics, his plans are thwarted when communist authorities withdraw the permission to open a physics section there. As an alternative, he starts studies in what was called "philosophy of nature." Fortunately for him, the physics and mathematics courses which had been prepared for the now shuttered physics section were incorporated into this area of study, allowing access to the subjects that so intrigued him. From the time he is a young priest, he begins meeting with various intellectuals, especially physicists and astronomers, through common excursions such as skiing and sailing.

1963: Karol Wojtyla, the future Pope John Paul II, becomes Archibishop of Cracow, a year after the first sessions of the Second Vatican Council.

1965: Obtains master of philosophy degree from the Catholic University of Lublin with a thesis on the philosophical aspects of relativity theory.

1966: Receives Ph.D. from the Catholic University of Lublin with a thesis in relativistic cosmology. Because the university is denied the right to grant degrees in physics, the Ph.D. is in philosophy. Heller begins teaching at the diocesan seminary in Tarnow and also in Cracow, in what would become the Pontifical Academy of Theology. The ongoing interference of the Communist regime continues to bear on his academic parameters. The Jagiellonian University – Poland's oldest university, founded in 1364 – had expelled its theological faculty in 1954, but the faculty, now including Heller, continued its activities unofficially.

1969: Receives docent degree (assistant professorship) from the Catholic University of Lublin. A non-teaching degree, though it carries the rights to teach, it represents an academic achievement above and much more demanding than that of doctorate. His thesis covers Mach's Principle in relativistic cosmology.

This is a heady time as Karol Wojtyla, then Archbishop of Cracow, begins inviting scientists, philosophers and theologians to his residence to discuss topics at the interfaces of science and philosophy, science and theology, and science and general culture. Joseph Życiński (later Archbishop of Lublin) and Heller are part of this group, which starts calling itself the Center for

Interdisciplinary Studies (CIS). Życiński and Heller are part of the Theological Faculty in Cracow, and CIS comes to be regarded as part of it.

1970: Heller's first book, *Wobec Wszechświata* (Facing the Universe) published (Wyd. Znak, Cracow). He goes on to write and publish more than 30 books in Polish, roughly divided into three classes: 1) popularization of science, especially cosmology and its philosophical aspects; 2) philosophy of nature and philosophy of physics; and 3) science and religion.

1974: While he is with the Theological Faculty in Cracow, the Sacred Congregation of Seminaries and Universities in Rome bestows upon it the title of "Pontifical" at the initiative of Wojtyla. Under Wojtyla's tutelage, the single faculty develops into three: Theology, Philosophy and History.

1977: Named Visiting Professor, George Lemaitre Chair, at the Institute of Astrophysics and Geophysics at Catholic University of Louvain, Belgium. After years of refusal by authorities to grant him a passport, he finally receives permission to travel outside of Poland. Still, obstacles remain, including obtaining visas from countries he wishes to visit, since many nations considered any traveller from Poland to be a Communist. Waits for visas at some consulates could stretch for days.

1978: After Wojtyla is elected Pope John Paul II, Heller and Zycinski continue the informal CIS seminars begun as Wojtyla's scientific-philosophic meetings

1980s: The rise of the Solidarity trade union movement ushers in an era of long-suppressed freedom across Poland that leads to weakened constraints from Communist authorities, and the freedom to publish and to travel.

Heller is among the physicists and astronomers interested in cosmology who start to gather in private houses, from which the Cracow Group of Cosmology emerges. They do common research and publish several papers advancing their scientific interests.

1981: John Paul II creates the Pontifical Academy of Theology from the former theology, philosophy and history faculties at the Pontifical Theological Faculties in Cracow.

1982: Conducts research at the Institute of Astrophysics at Oxford University, U.K. and at the Physics and Astronomy Department of Leicester University, U.K. Returns to the Catholic University of Louvain, Belgium, where he again holds the George Lemaitre Chair at the Institute of Astrophysics and Geophysics**.**

1985: Appointed Associate Professor (*professor extraordinarius*) at the Pontifical Academy of Theology in the Faculty of Philosophy, Cracow, Poland.

1986: Conducts research in the Department of Philosophy, Catholic University of America, Washington, D.C., and at the Vatican Observatory in Castel Gandolfo, Italy. One of the oldest astronomical research institutions in the world, the Observatory's dependent research center, the Vatican Observatory Research Group, is hosted by the Steward Observatory at the University of Arizona in Tucson, where it operates a new generation telescope, known as the Vatican Advanced Technology Telescope at the Mount Graham International Observatory in southeastern Arizona.

During this time Heller and colleagues begin meeting with scholars from the West who visit as private guests, including Carl Friedrich von Weizsäcker, Charles Misner, Olaf Pedersen and others. As social transformations inspired by the rise of Solidarity facilitate international contacts, especially after 1989, many prominent scholars from the West are invited to take part in the interdisciplinary seminars sponsored by CIS in Cracow, including Arthur Peacocke (Oxford), John Polkinghorne (Cambridge) and Robert Russell (Berkeley).

1990: Appointed Full Professor (*professor ordinarius*) at the Pontifical Academy of Theology in the Faculty of Philosophy, Cracow.

1991: Elected (ordinary member) to the Pontifical Academy of Sciences, Rome. An independent body within the Vatican with full freedom of research, the Academy promotes scientific investigation and interdisciplinary co-operation. A continuation of the Lincei Academy founded in 1603, it was later renamed Nuovo Lincei by Pope Pius IX. Since its current renaming in 1936 by Pope Pius XI, the Academy has broadened its membership to include men and women from around the world and from a wide range of religions and academic positions. New members, elected by the Academy based on the scientific value of their research and high moral profile, are appointed by the Pope for life (80 members) or to one of a limited number of honorary academy memberships.

1992: *Theoretical Foundations of Cosmology – Introduction to the Global Structure of Space-Time* published (World Scientific, Singapore-London). The book is a technical study of the Universe as a structure.

1994: Influenced by Alain Connes' book, *Noncommutative Geometry* (Academic Press, 1994), Heller's interests gradually shift from cosmology proper to mathematical methods in cosmology and physics. Along with two other mathematicians, Leszek Pysiak and Wieslaw Sasin from Warsaw Technical University, he forms a second informal seminar group to work on the application of noncommutative geometry to cosmology and physics. The group remains active today.

1996: *The New Physics and a New Theology* published (Vatican Observatory Publications, Rome). It explores the historical fact that, in spite of their methodological differences, science and theology always interacted with each other.

1996: Receives Doctor Honoris Causa from the University of Science and Technology, Cracow. Begins research at the Liège Astronomical Observatory at Liège University in Belgium, and returns there over a period of several years.

2003: *Creative Tension – Essays on Science and Religion* published (Templeton Foundation Press, Philadelphia – London, and translations). A collection of essays, originally written in English, the book begins with a methodological analysis of theological interpretation of scientific theories, and culminates in a proposal of a "theology of science."

2004: Teaches mathematical physics as a visiting professor at Gregorian University in Rome.

2005: *Some Mathematical Physics for Philosophers* published (Pontifical Council for Culture, Gregorian University). The book is an attempt to explain mathematical methods in physics to students of philosophy. The paper, "Can the Universe Explain Itself?" published in *Wissen und Glauben* (Knowledge and Belief) (Öbvahpt, Vienna).

2006: Returns to Gregorian University in Rome as a visiting professor.

2008: *A Comprehensible Universe: The Interplay of Science and Theology* scheduled for publication (Springer Verlag, July). Written with George Coyne, the book explores the deep roots of the mystery of rationality. *Ultimate Explanations of the Universe* scheduled for publication (Universitas, in Polish). This book examines the crucial philosophical question concerning cosmology, "Can the Universe explain itself?"

Awarded the Templeton Prize.

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