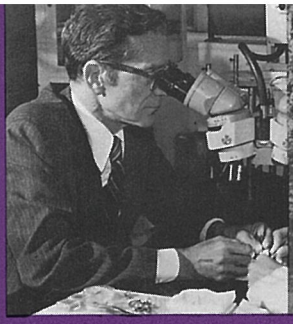

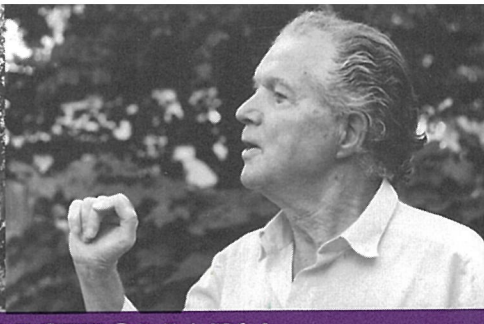

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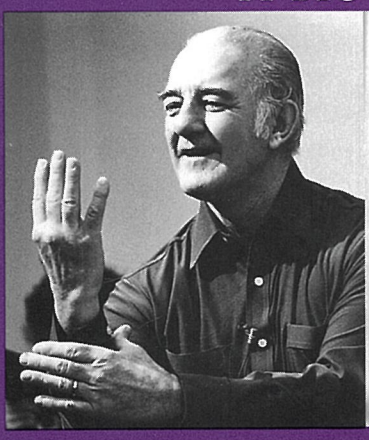
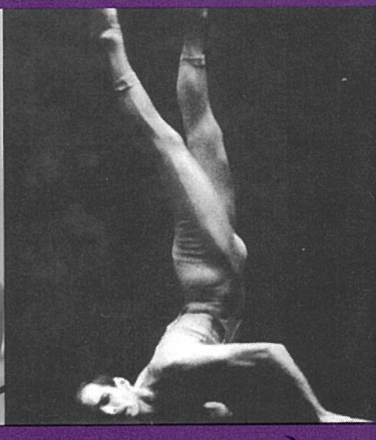
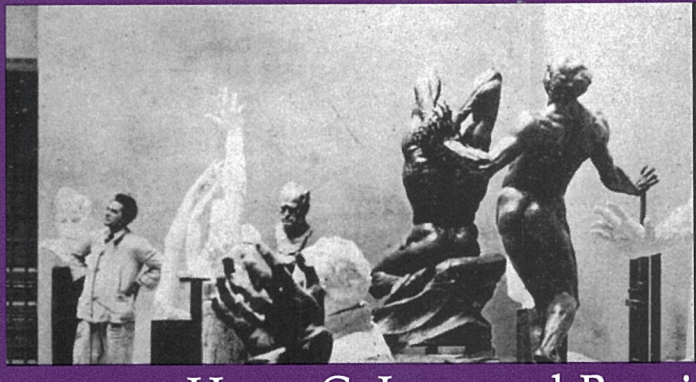
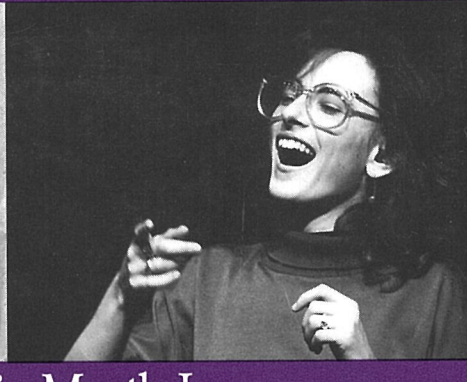




DEAF PERSONS IN THE *Arts and Sciences*

Harry G. Lang and Bonnie Meath-Lang

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OLAF HASSEL (1898–1972), Norwegian Astronomer.

Olaf Hassel was born on a farm at Upper Sandsvaer on May 12, 1898, a few miles from the town of Kongsberg, Norway, and was completely deafened at the age of one. In his autobiographical notes, Hassel reminisced that "some people have written and spoken about the bright years of my childhood. But for me, without hearing, my childhood years were the worst and darkest of my life. I soon noticed that I was different from other children and adults who could hear and talk, and I was of course disconsolate with my heavy destiny." From 1907 until 1915, Hassel studied at the Christiania Public School for the Deaf in Oslo, where he received training as a designer. During his final year in the school, the principal arranged for him to begin additional training in the Museum of Art; and an instructor encouraged him to become a lithographer. When offered a position as a copper etcher, he came close to accepting it, changing his mind only because his parents preferred that he stay at home. He worked on his parents' farm for twenty years, until his mother's death.

Hassel took an interest in astronomy while in his final years at the school for the deaf. He busied himself learning the names of the constellations and identifying known comets, and he became proficient enough to point them out to others. The astronomer Sigurd Einbu's monthly articles in a local newspaper further roused Hassel's interest. In 1918, one report in particular, a description of a large nova discovered by a Swedish student, started him dreaming of discovering one himself. Upon Einbu's suggestion, Hassel joined the Nordic Nova Society; and he was subsequently assigned observational areas near the constellation Gemini. His responsibility was to monitor the region for new stars or comets, and to warn astronomers of any findings. He was also encouraged to study variable stars in his field of observation. Hassel soon felt disappointed, though, with the limited area assigned him. He purchased books on astronomy and began to expand his territory. At the end of World War I, he was delighted to see his father have electric lights installed in the farmyard. Now he could study college textbooks in the early hours of the morning. He used a borrowed collapsible telescope, his father's old binoculars, and opera glasses to experiment with his own observational techniques.

Hassel became particularly fascinated with the numerous dim stars in the Milky Way region. On September 2, 1919, he discovered a dim Bronson-Metcalf comet; and, in the following year, he discovered a star of second magnitude in Cygnus, "the Swan." In 1921, he discovered a dim Reids comet without a tail, also in Cygnus. Einbu described Hassel's discovery in one of his monthly articles, noting that the deaf youth had found the star with only a spectacle lens.

Hassel and the geophysicist and mathematician Fredrik Carl Størmer, a professor at the University of Oslo, accumulated an enormous amount of observational material on altitude, size, shape, and periodicity of the auroral displays. On the subject of nacreous ("Mother-of-Pearl") clouds alone, Størmer published

no less than seventeen papers between 1927 and 1951; and Hassel assisted in preparing the photographs found in many of Størmer's reports.

It was during a study of binary stars that Hassel made one of his most exciting discoveries. After spotting the Reids comet in 1921, he spent the next eighteen years exhaustively observing the heavens finding no new undiscovered celestial bodies. It was thus with no great sense of expectation that he looked through his telescope on Sunday night, April 16, 1939, to observe R Trianguli, a binary star system. Looking out over the firmament, he was surprised to see the tail of a bright comet between two clouds. The comet was in the constellation Andromeda. Unable to use the telephone because of his deafness, Hassel ran to find someone at the local telephone office to call the Oslo observatory. The office was closed when he arrived, and he rapped on the door. Still no one answered. He then tapped on a window in the back of the house and awakened a startled woman to explain the circumstances.

The next morning, the telephone operator called Einbu who then contacted the observatory at Copenhagen, but the Northern Lights made it difficult to spot the comet that night. The clouds at Oslo and at home thwarted his own efforts to watch the nameless comet. For several days Hassel waited, and finally Einbu sent him the message that no other Norwegian astronomer had identified the comet. It was his.

Anxiously, Hassel waited for days until a confirmation arrived from Copenhagen that he was the comet's discoverer. Congratulations for discovering "Comet Hassel 1939" poured in from around the world, and the amateur astronomer experienced the true joy that accompanies such a finding. The comet passed its perihelion on April 10, and it distanced itself from the sun and Earth, its glow decreasing. As it traveled in a path across the constellation Perseus and into Gemini, observations again became difficult because of glare. Preliminary calculations estimated the period of Olaf Hassel's comet at about 330 years. The comet was later renamed "Comet Jurlof-Achmarof-Hassel" when it was learned that two Russian astronomers had also sighted it.

Hassel worked at the Meteorological Institution of Oslo from 1941 to 1968 and continued to study the heavens. While photographing the Northern Lights for Fredrik Størmer, he nearly discovered another comet of the seventh magnitude in the Dragon, but an observer in South Africa had beaten him by a short time. Hassel was awarded several grants from the Nansen Foundation, including one for a solar eclipse expedition in 1927. He planned to make several films simultaneously through two telescopes using a homemade device. The weather, however, ruined his expedition. It rained very hard, and he was unable to complete the project. On a similar expedition eighteen years later, this time to Nordland, the same thing happened. Then, nine years later, his third attempt to photograph a solar eclipse was also rained out. Another Nansen Foundation grant provided him the opportunity to take depth and temperature measurements of a number of inland lakes, including Eibern and Fiskum Lake, of which little was known at the time.

Hassel was a dedicated astronomer and carried a camera wherever he went. He frequently brought his photographs with him, too, to share his adventures with others. He was a kind and gentle man, extensively involved with the Norwegian Deaf community, and always had time to visit the old and infirm. He was fluent in Norwegian Sign Language. He communicated with other astronomers predominantly through writing and lipreading. Throughout his life, he shared his knowledge of astronomy with the Deaf communities of Norway and other nations. At the Nordic exhibition of deaf people's work in Copenhagen in September 1934, Hassel displayed a model of the relative distances of stars in light-years, using white pearls suspended in a large, dark cabinet measuring more than ten feet in length, width, and height. King Christian X of Denmark personally complimented him on the exhibit, and many astronomers praised it. In Paris for a convention of deaf people, Hassel visited a planetarium and found an error in the positions of the stars in one of the displays. At another convention for deaf people in Italy, he took special pleasure in observing stars that were not visible at home in Norway.

Hassel made his second significant discovery, a nova, on March 7, 1960. He found the new 5th-magnitude star near the boundary of Hercules and Aquila, slightly west of Zeta Aquilae. That morning, his wife woke him up earlier than usual; and since there was still some time to observe the sky before dawn's light, he went up to his loft and opened the skylight. As Hassel wrote in his autobiographical notes:

> I happened to raise my prism telescope a little too high over the brightest part of the . . . horizon. Then I made a fantastic discovery! In the telescope I caught sight of a star of the 5th magnitude which I had never seen before. I realized it was a nova and immediately informed Professor Rosseland.

Photographs by a Japanese astronomer a few days earlier did not show the nova among the dim stars. All over the world astronomers turned their telescopes to the star. It was first called "Nova Hassel" because it was thought to be between Hercules and the Eagle. Later, it was decided that the new star belonged to Hercules and it was assigned the astronomical name "Nova Hercules 1960 (Hassel)."

A decline in visual brightness of the nova discovered by Hassel was reported over the next few weeks. On March 9, A. F. Jones in New Zealand estimated the nova as magnitude 5.2. By March 19 it was 5.8 according to A. V. Nielsen in Denmark. German astronomers, however, reported it as 6.2 on March 21 and 22. These measurements were confirmed by the American Association of Variable Star Observers which also reported a magnitude of 6.8 on March 29. At Kitt Peak Observatory on March 12, D. Crawford measured the nova at 5.49 at 11:00 Universal time using the photoelectric photometer of a 16-inch reflector telescope. Also at Kitt Peak, Helmut A. Abt obtained a spectrum of the nova, using the 60-inch Mount Wilson reflector. Dr. Abt explained that most of the

star's light came from the emission lines of hydrogen, ionized calcium, iron, and titanium. His measurements indicated that the star was a "fast nova," one that runs rapidly through its sequence of spectral changes, declining quickly in brightness. Olaf Hassel's star was estimated to be about 3,000 light-years from Earth. He acknowledged his wife's role in his discovery: "In my opinion, my deaf wife Marie deserves the main credit for the first Norwegian nova discovery. If she had not wakened me ten minutes earlier, it would have been too late to watch it in the morning light."

Hassel was a member of Amatørastronomen, a group affiliated with the Norsk Astronmisk Selskap (Association of Amateur Astronomers). He was given the Fridtjof Nansen award and the American Association of Variable Star Observers' award for his discovery of Nova Hercules 1960. The latter award was presented to him by the American Ambassador to Norway. He was elected an honorary member of the Norwegian Astronomical Society in 1969. The deaf astronomer's most important contributions were in the general observations of variable stars over a fifty-year period. In 1970, the King of Norway's gold medal of service was conferred upon Olaf Hassel for his contributions to astronomy.

Between the years 1970 and 1972, three of Hassel's brothers and two sisters-in-law died. He became very depressed and fell ill himself. His niece, Mrs. Reidun Guldal, went to visit him and found the door locked. Finding Hassel ill in bed, she brought him to her home to take care of him. After several days his health worsened and he entered a hospital. During the final week of his life, Hassel discussed the subject of life after death with his good friend who was a clergyman for the Deaf community in Oslo. "When I die," Hassel signed, "I shall ask the Almighty God to make me a star which will twinkle for you." He died soon afterwards, on August 15, 1972.

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VILEM J. HAUNER (1903–), Czechoslovakian Artist.

Vilem J. Hauner was born in June 1903, the son of a scholar and scientific writer; he was deafened at the age of six months. His mother taught him his own language as well as English and French. A private tutor was also hired to provide Hauner with lessons in the home. At the age of eight, Hauner attended private classes in drawing under a Mr. Ebert at the Normal School, learning floral designs and producing drawings highly praised at local exhibitions. He

DEAF PERSONS IN THE *Arts and Sciences*

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