

MILIVOJ JUGIN (1925 – 2013) - GREAT POPULARIZER OF ASTRONAUTICS AND SPACE FLIGHTS

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Abstract. This paper presents the life and work of Milivoj Jugin (Kikinda, August 22, 1925 – January 20, 2013).

Milivoj Jugin was born on August 22, 1925, in Great Kikinda (now the City of Kikinda) to father Maksim, a merchant, and mother Sofija, born Jovanović. He was born in the house at number 31, Dositejeva Street.



Figure 1: The house where Milivoj Jugin lived – photographed by Petar V. Vuca.

He attended primary school and grammar school in Kikinda, finishing it in 1942/1943. He studied at Belgrade Great Technical School, Department of Aviation, which he graduated in 1954. As an aviation engineer he worked on the construction of our well-known jet planes "Galeb"¹ and "Jastreb", as well as "Kraguj", the light piston-engined aircraft. Milivoj Jugin had his artistic side (he

¹ Olivera Stojmirovic, "Milivoj Jugin, constructor of the military aircraft "Galeb" and the live witness of the mision 'Apolo' ", *Glas javnosti*, July 26, 2009.

was a painter, photographer and traveller). He was a doyen of cosmonautics and a great popularizer of space exploration. He gave one of such lectures in the technical school in his native Kikinda. He was an energetic short man, and the father of Miomir, an aviation engineer, and a grandfather to Lara. In his home town Milivoj Jugin had an exhibition of his paintings, where visitors could see a picture painted when he was in grammar school and which was kept by his relative Mirče Jugin in Kikinda. When Milivoj saw the painting, he was surprised and delighted.



Figure 2: The picture Milivoj Jugin painted in grammar school, now kept by his relative from Kikinda – photographed by Petar V. Vuca.

Milivoj Jugin had a great interest in realization of space flights and cosmos exploration before the launch of the Earth's first artificial satellite. He was one of the most active popularizers and promoters of astronautics from the beginning of the cosmic era. He witnessed right on the spot the important moments of man's conquest of space. The climax of his exciting reports from the launching places was the broadcast of Apollo 11 launch from Cape Kennedy. At the moment when the rocket was taking off the ground was shaking, and the roaring sounds of the engines were thoroughly disturbing Cape, Milivoj Jugin uttered his well-known words "horrifying and magnificent". They were his farewell words to Apollo 11 on its flight to the Moon.

"Dear viewers, I am not sure if the roaring sound is reaching you... the ground under our feet is shaking... everything is shaking... This is a horrifying and magnificent sight! The first men have set off to the Moon!", were the words of Milivoj Jugin, a legendary TV commentator and the greatest popularizer of space exploration in the neighbouring countries, which conveyed to millions of Yugoslavs the thrill of the moment when Apollo 11 took off.

"Frivolous are the suspicions that the Apollo crew didn't get to the Moon at all and that Americans faked everything", Milivoj Jugin used to say. "That day I was at Cape Kennedy, having the honour of being on the bus that fetched Armstrong, Aldrin and Collins, and we saw them off to the launching pad; I saw them go to the spacecraft at the top of the "Saturn", the carrier rocket. I saw the launch through, first they entered the Earth orbit, and then set out for the Moon."

“What do you think of the stories about space tourism on the Moon? Don’t you have a ticket for the first commercial flight to the Moon, too?” “I do, but I fear that I won’t live long enough to travel. And even if I did, I couldn’t afford it.”“

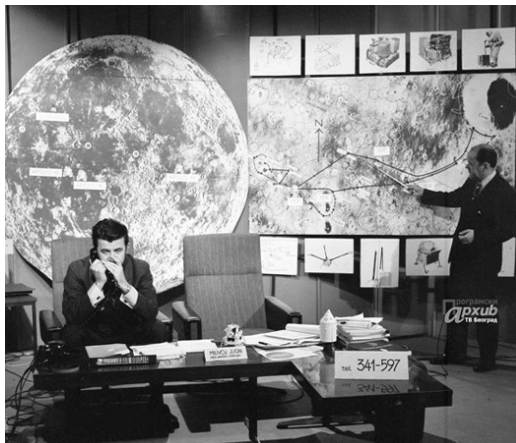


Figure 3: Aleksandar Đulejić and Milivoj Jugin in TV Belgrade studio during the broadcast of Apollo 14 flight – photo by Slava Čortomić, 1971.

Milivoj Jugin is the author of numerous texts on specialist and other subjects. He wrote eleven books: *Earth’s Artificial Satellites* (1960), *Conquest of Cosmos* (1963), *Satellites and Spacecrafts* (1965), *Man and Cosmos* (1969), *Cosmic Technology and Its Application* (1971), *Voyage to Cosmos* (1975), *We Are All Cosmonauts* (1977), *Visiting Universe* (1977), *Military Perspective of Cosmos* (1986), *Cosmos Reveals Secrets* (1997), *Man, Plants, Animals in Cosmos* (1998), and *Eternal Circle* (2000). He delivered a large number (around 500) of popular lectures on astronautics. He was a contributor to many newspapers and magazines. Yugoslav public knew him as the TV Belgrade expert commentator on events in cosmos from 1961. In a live broadcast from Cape Kennedy he commented on the first launch of men to the Moon in the Apollo 11 spacecraft.

Milivoj Jugin: **“SVI SMO MI KOSMONAUTI”** (“**WE ARE ALL COSMONAUTS**”), Zavod za udžbenike i nastavna sredstva, Beograd, 1995 (Popular science for children)

The author of the book poses a lot of interesting questions commonly raised by young people about the infinity of the universe, a dramatic revelation of its secrets and answers provided by science in recent years, as well as possibilities that can be suggested. This is contained in the book written by engineer Milivoj Jugin with knowledge and great love. He explains clearly and concisely laws of physics, without any mathematics. It is very intelligible to small children. The book demonstrates author’s great narrative skills. The book contains answers to

the question how the Sun was formed; the question about the Earth's place in the universe; how a satellite flies; traps of the universe; the cosmic carousel; weightlessness; here and there around the cosmos; we are all cosmonauts; how distant the stars are; whether we are alone in the universe; together in the universe;

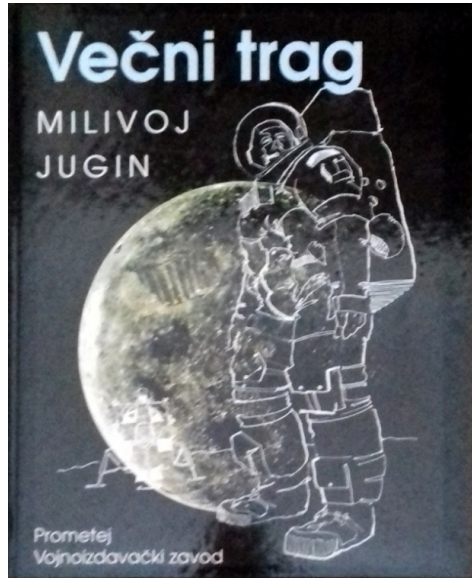
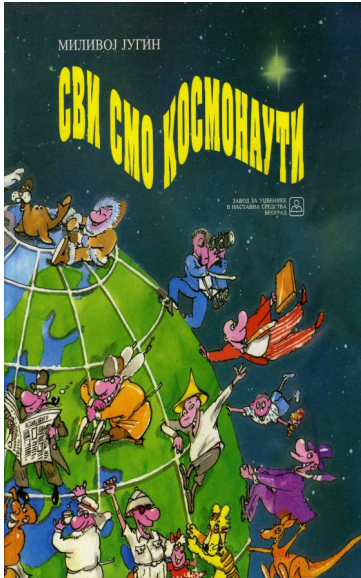


Figure 4: Two books of Milivoj Jugin and the Soviet cosmonaut Pavel Popovich accompanied by Milivoj Jugin during a visit to Belgrade; photographed by Stevan Kragujević (by permission of M. Jugin's daughter Tanja Kragujević)
Milivoj Jugin: “VEČNI TRAG” (“ETERNAL TRACE”), Prometej, Vojnoizdavački zavod , Novi Sad, 2000.

twelve visitors of the Moon; satellite man; our address in the universe; true stories about Sputniks; about Laika; about astronautic and cosmonautic attractions; spaceships; smart robots that tell men all they have seen and learnt in the form of the most beautiful and exciting fairy tales. Using poetry and jokes, with imagination, Milivoj Jugin takes his readers along the paths passable for children's awareness, he teaches and entertains, and arouses creative curiosity. I recommend this book to all who teach young generations (particularly preschool and junior school teachers). The book is winner of "Neven" literary award.

At the time of writing history, the event of July 16-25, 1969, will hold a special place. That was the moment when Man set out for the Moon, stepped on its surface and returned safely to Earth. During the 10-day Apollo 11 mission people's thoughts throughout the world were focused on achieving its goal. It was the moment of scientific and technological progress.

The central topic of the book "Eternal Trace" is Apollo 11 mission. When the time of the first flight to the Moon passes into oblivion, and when space travel becomes as common as intercontinental air travel, for readers interested in it Milivoj Jugin's book "Eternal Trace" will possess the charm of the few pieces of our literature that have lasting value. Pages of the book make an outstanding contribution of Milivoj Jugin to popularization of science and history of astronautics. The book was written in the beautiful ornate Serbian language. The copies of the book in Serbian are very few. It is richly illustrated with selected photographs and the author's oil paintings. Part of the book contains his personal biography stories, as well as interesting descriptions of his meetings and moments of friendship with famous cosmonauts and astronauts, amongst whom were some of Jugin's personal friends. He brought some of them to his home town Kikinda. The book consists of three parts: **MEMORIES OF THE BEGINNING, MOON DIARY** and **SPACE MEMORIES**.



Figure 5: Astronaut Neil Armstrong, the first man on the Moon (oil painting by Milivoj Jugin).

For years Milivoj Jugin, was the general secretary of the Yugoslav Association of Astronautical and Rocket Organizations (SARAJ) and the president of the Yugoslav Association of Astronautical and Rocket Organizations. He received public recognition and medals for popularization of science. He was a corresponding member of the International Academy of Astronautics (IAA), and attended its annual congresses. He visited USA space centres six times, as well as Cape Canaveral, and attended the launches of Apollo and Space Shuttle spacecraft. Several times he visited Star City of Russian cosmonauts and Baikonur Cosmodrome, where he attended the launch of the Soyuz manned spacecraft.

He was a personal friend and acquaintance of a great number of cosmonauts and astronauts. Milivoj Jugin entertained the famous Russian cosmonaut Viktor Petrovich Savinih. They visited the town of Guča. He took Pavel Popovich, the cosmonaut, for rides in his small Fiat car ("fića"). They were great friends.

Milivoj Jugin was granted permission to attend the Baikonur launch of the new Soyuz TM-5 crew, whose destination was the orbital station "Mir". The launch was successful and nine days later Savinih returned to Earth with his colleagues Solovjev and Aleksandrov.

He professionally organized three international cosmos exhibitions in Belgrade: COSMOS TO PEACE - 1 in 1967; COSMOS TO PEACE – 2 in 1971, which welcomed as guests Popovich, the Soviet cosmonaut, and Thomas Stafford, the American astronaut who commanded the Apollo 10 mission; COSMOS TO PEACE – 3; and also The First International Symposium "Space Exploration and Society" in Belgrade in 1971.

He passed away on 20th January, 2013.²

² Grujica Ivanović: "Recollections on Milivoj Jugin", *Astronomski magazin*, 19. January 2014.