

Leonardo da Vinci and the Space Age

By KAREL HUJER

(Dr. Hujer is Guerry professor of astronomy and physics at UTC. He sent this piece to us from London after attending the Leonardian symposium.)

At this time of triumphant landing on the moon, the Leonardian International Symposium in Florence and Vinci was no ivory tower affair. Half a millennium ago Leonardo's universal genius had a lion's share in the ultimate engineering accomplishments of the technique of aviation in his countless sophisticated drawings and sketches of flying birds and flying machines. This unusual scientific symposium was solemnly inaugurated in the superb premises of the Leonardian Society on the bank of the unpredictable Arno River in the fascinating treasure house of Italian Renaissance Florence.

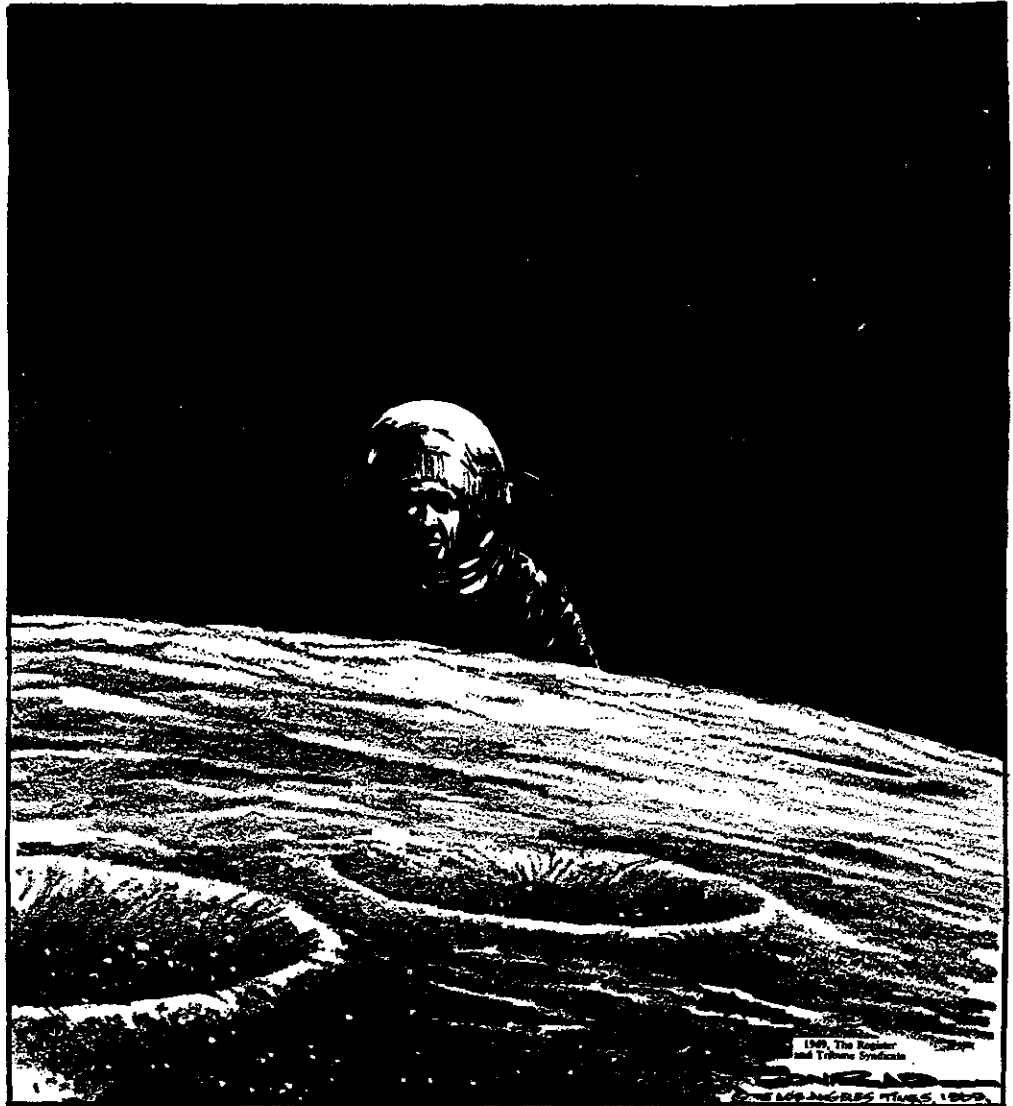
The treacherous November 1966 flood had submerged this area some 12 feet deep in surging water. This probably was a reminder of the coincidences of contraries which plagued the life of that genial as well as inefficient and retiring dreamer, Leonardo, for whose 450th anniversary of passing this gathering of Leonardian scholars took place * * *

The fact that Leonardo's masterpiece, *The Lord's Last Supper*, in Santa Maria delle Grazie in Milan, started to decay in his lifetime, is a symptom of his homeless life. Strangely, Leonardo cannot be called a talented man. He was a man of overwhelming genius to the point where he was constantly impeded by his geniality. On the one hand he did not work fast enough, on the other, he did not work enough, leaving behind a vast amount of unfinished work in various fields of science, and unpublished notes in his highly individualistic mirror writing with his left hand.

Chattanooga's Hunter Art Gallery last June had an excellent IBM display of model reconstructions of a small fraction of Leonardo's mechanical ideas. These clearly indicated that an illegitimate child of a peasant girl of Vinci, known only under the name of Catarina, fully belonged to our age of automation.

Leonardo, too, was a genial engineer, anatomist, geologist, botanist, mathematician, and astronomer. Another symposium to his memory only reveals that he continues to be the source of inexhaustible surprises as his notes, drawings and sketches are being carefully analysed and investigated. Explorers had to rediscover what Leonardo already knew and retrace paths he already trod and mapped * * *

Now, when the first men from



Manrise

the New World have set their feet on the moon, it is especially noteworthy that Leonardo was first to explain the origin of the faint light which makes the entire lunar disk visible when the moon is in the slender crescent shape shortly after or before the new moon phase. This faint light is called earthshine because it is reflected light, as Leonardo stated, of our own earth which is about in the full phase shining on the lunar regions turned away from the sun at this particular stage. With lunar circumnavigations now many times accomplished by terrestrial astronauts, this explanation appears obvious and commonplace. Not so in Leonardo's time. A quick glance at the average state of mind half a millennium ago will reveal this simple rational interpretation to be very dangerous, particularly as almost one hundred

years later, in 1600, Giordano Bruno was burned alive for his pioneering scientific enthusiasm.

The point is this rational explanation of earthshine on the moon was in conflict with the ruling Aristotelian, scholastic dogma that lunar regions, being in the celestial sphere, were incorruptible, ethereal, unchangeable, and enjoyed all the qualities of divine perfection.

Regions nearer than the moon, described as sub-lunar, were corruptible, changeable and subject to all imperfect qualities as we see them on this ephemeral world. The light of the earth reaching the moon, making it faintly visible to us on earth, was a shocking blasphemy, utterly unacceptable to the official medieval theological doctrinaires. This alone shows the advanced and highly controversial mind of Leonardo da Vinci who only escaped the fate of Sa-

vonarola and Bruno because his feudal employers and exploiters such as Lodovico Sforza and Cesare Borgia hoped to obtain from his skills useful works to glorify or perpetuate the illusion of their own passing political power.

Now the tomb of Leonardo, that homeless pilgrim living in a dangerous and cruel age, is lost somewhere in a small church in Amboise, France. Although his frail records were scattered, nothing seems to prevent his continued growth in the foundation of lasting qualities of what is best in human culture.

It is significant that every year between 1860 and 1920, in Europe alone, a full-sized book was published on some phase of Leonardo's life. As a dreamer and perfectionist, half a millennium ago, he could clearly see what even today in this space age only few can behold while standing on his shoulders.