

Lot #1716 10/95





# USSR

## ЛУНОХОД-1



### МОРЕ ДОЖДЕЙ

Xepeon om.

To radio UK 5GAL

CFM our QSO on 7.04. 1974

at 11.08 MSK/GMT CW/AM/2way SSB

Ur sigs RST/RS 59 on 28 mc

Xmtr 40 wttts. Rcvr 12 tubes. Ant GP

QTH \_\_\_\_\_ Zone 17 Region N: 019

Remarks ZIR QSL, P-100-0.

Cheerio! 73! Op. Danil

PSE - QSL - TNX via P.O. Box 88, Moscow, USSR

**RL7JBP**

LL85 - Kamenogorsk



**ПЕРВЫЙ В МИРЕ  
КОСМОНАВТ**



Редактор *Л. Строганова*  
Технический редактор *Ж. Чертова*  
А05716 25/VI-61 г. Изд. № 5-88. Печ. л. 0,5. Уч.-изд. л. 0,74  
60X<sup>23</sup>/<sub>22</sub>. Цена 11 коп. Тираж 20 000. Зак. 189.



Clyde W. Tombaugh



Пролетарии всех стран, соединяйтесь!

ПРОПУСК № 1826

Лазарев  
Василий Тригорьевич

На Красную площадь 14 апреля 1961 года  
на демонстрацию, посвященную успешному  
осуществлению космического полета первого в мире  
человека в космос

Начало в 12 ч. 30 мин.

Вход со стороны Москвитинской  
через Васильевский спуск, Моск-  
ворецкий мост и ул. Ракина

Действителен при предъявлении документа

ПРАВАЯ 6  
ТРИБУНА

СССР г. КАЛУГА

УАЗ-12804

Для DL 11Y

Ваши сигналы слышал 19.5.19

в 21.59 MCK с RST 504

на 20 м.

Передачик 7 ватт

Приемник 9 tubes super

73. Оператор Николай Денисов

Прошу Вас прислать карточку:

СССР, Москва, п. я. 88

19.5.1961



Знаменитый  
советский деятель науки  
основоположник теории ракетопла-  
вания и междупланетных сообщений  
К. Э. Циолковский

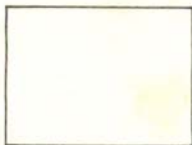
ТБ06051. Тираж 1500 экз. Зак. 2491.

Тип. изд. Воровского Госпланиздата, г. Калуга

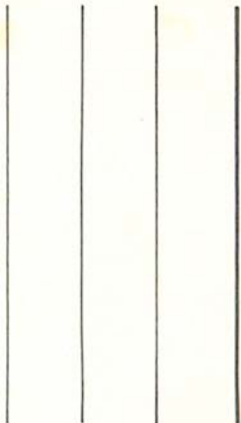


*W. von Braun*

Vater der Raumfahrt



wp  
/ 20-



STAMPED

H. Oberth

THE SPRING 1994 SPACE MEMORABILIA AUCTION

DATE 05 26 1994

R KOSMODROM  
BAIKANUR  
N° 220

30-летие  
первого в мире полета  
человека  
в космос



*Le plus beau Premier Jour*

RECOMMANDE

КАЗАКСТАН  
ҒАРЫШҚА ҰШУ  
БАЙҚОҢЫР  
ПОЧТАСЫ  
1 ШИЛЕ 1993

РАЙЦЫ

РЕСЕЙ

*J. T. H. H.*

*Chrys*  
*В. Г. Г.*  
*А. Г. Г.*



141070 г. Калининград  
Московской области  
ул. Садовая 4-47  
Есин С. А.

☎ (095) 516-7901

*B. H. H.*

КОСМОДРОМ  
БАЙКОНУР

Экипаж космической  
станции "МИР"



CONCORDE & SPACE SHUTTLE LIBERIAN SHEET  
only 50 FIRST DAY COVERS EXIST

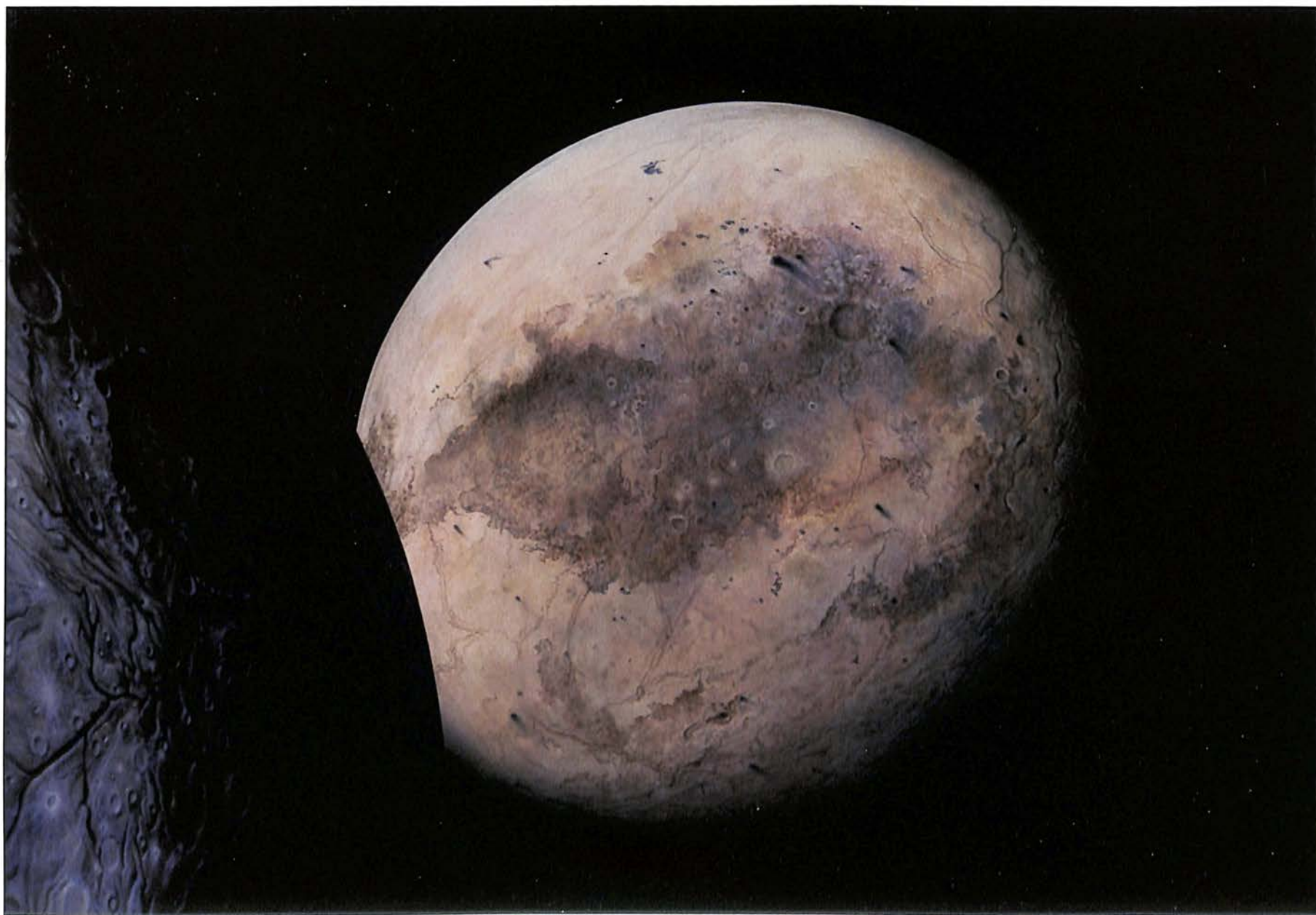




National Aeronautics and  
Space Administration

*Clyde W. Tombaugh*

Pluto **p**



NASA artwork by Pat Rawlings

## Lot 2480

**AUTOGRAPHS • United States • Scientists/Others**  
**Clyde Tombaugh Autograph**

Superior Galleries • Beverly Hills, CA 90212 • (310) 203-9855 • (800) 421-0754

- |                                                     |                                    |
|-----------------------------------------------------|------------------------------------|
| <input type="checkbox"/> ALBUM                      | <input type="checkbox"/> HELMET    |
| <input checked="" type="checkbox"/> ENVELOPE/FOLDER | <input type="checkbox"/> MODEL     |
| <input type="checkbox"/> FLAT/FRAMED                | <input type="checkbox"/> SPACESUIT |
| <input type="checkbox"/> LARGE BOX                  | <input type="checkbox"/> TUBE      |
| <input type="checkbox"/> SMALL BOX                  | <input type="checkbox"/> OTHER     |

## SUPERIOR STAMP & COIN

9478 W. OLYMPIC BOULEVARD • BEVERLY HILLS, CA 90212-4299  
TEL 310-203-9855 TOLL FREE 800-421-0754 FAX 310-203-8037  
[www.superiorsc.com/superior/](http://www.superiorsc.com/superior/)





Pluto is unique among the planets. It's the smallest, the coldest, and the farthest from the Sun. Its orbit is the most elliptical and tilted, and it's the only planet that has a moon so close to its own size. Because of its great distance, Pluto remains the only planet that has never been visited by spacecraft.

Pluto wasn't discovered until 1930, when American astronomer Clyde Tombaugh first captured it on photographs. Because of its faintness, several decades elapsed before much was learned about Pluto. However, beginning in the late 1970s, as astronomical instrumentation and telescope technology began to advance rapidly, so did the number of things known about Pluto.

We now know Pluto's diameter is much smaller than was believed at its discovery. In fact, Pluto is only about 2,400 kilometers across, which means that Pluto is smaller than Earth's moon! Pluto's surface, which is slightly reddish, is made up of exotic snows, including methane, nitrogen, and carbon monoxide. Evidence indicates that Pluto's interior consists primarily of rock and water ice. Above the planet's surface lies an atmosphere, which is not very dense; the atmospheric pressure on Pluto is just one millionth that on Earth. Although the atmosphere is much more tenuous than Earth's, Pluto's low gravity (about 6% of Earth's) causes the atmosphere to be much more extended in altitude than our planet's. Because Pluto's orbit is so elliptical, Pluto grows much colder during the part of each orbit when it is far from the Sun. As a result, Pluto's atmosphere is thought to persist only for the part of each orbit when Pluto is closer to the Sun, as it is now.

In 1978, American astronomers James Christy and Robert Harrington discovered that Pluto has a satellite (moon), which they named Charon. Charon, which is almost half the size of Pluto, orbits the planet every 6.4 days, at an altitude of about 18,300 kilometers. Given the rough similarity of Pluto's size to Charon's, most planetary scientists refer to Pluto-Charon as a double, or binary, planet. Charon's surface differs from Pluto's; it is covered with dirty water ice and doesn't reflect as much light as Pluto's surface. Also, Charon's surface is

devoid of strong color, and there is no confirmed evidence for an atmosphere on Charon.

In the late 1980s, Pluto and Charon underwent a set of mutual eclipses in which each body passed in front of the other repeatedly for several years. This pattern of events can be seen from Earth every 124 years, and will next begin in 2109 AD. Based on data from these eclipses and sophisticated computer models, it was possible to make crude maps of each body. From these maps it was learned that Pluto has polar caps, as well as large, dark spots nearer its equator. Because Pluto is so small and far away, it is impossible for any telescope on Earth to directly see these features. By getting above Earth's blurring atmosphere, the Hubble Space Telescope is capable of mapping Pluto; in 1994 the newly repaired Hubble will undertake this project.

Today, questions such as "How were Pluto and Charon formed?" and "Why are they so small and different from all the other planets?" still remain. One leading theory suggests that Pluto and Charon are relics of a population of hundreds or thousands of similar bodies that were formed early in solar system history. According to this hypothesis, most of these bodies were ejected to much larger distances from the solar system by the gravitational influence of the giant planets. The

recent discovery of several bodies approaching the size of Charon in the region beyond Pluto has bolstered this theory.

Although no spacecraft mission has been sent to Pluto, NASA is presently working with scientists around the United States to discuss and evaluate plans for a mission to explore this strange double planet. According to these plans, one or two small spacecraft would be launched at speeds as high as 160,000 kilometers per hour in 2000 or 2001, so that they could reach Pluto before 2010, when the planet's atmosphere is expected to begin collapsing onto the surface in a planet-wide snow storm.

## Significant Dates

- 1930 — Pluto discovered
- 1955 — Pluto's 6.4 day rotation period discovered
- 1976 — Methane on Pluto's surface discovered
- 1978 — Charon discovered
- 1985 — Onset of Pluto-Charon eclipses (lasted 1985–1991)
- 1988 — Pluto's atmosphere discovered
- 1992 — Nitrogen and carbon monoxide on Pluto's surface discovered
- 1994 — First Hubble Space Telescope maps of Pluto
- 2010 — Predicted atmospheric collapse

## Fast Facts

|                                         |                                       |
|-----------------------------------------|---------------------------------------|
| <b>Namesake</b>                         | Roman God of the Underworld           |
| <b>Average Distance from the Sun:</b>   | 6 Billion Kilometers                  |
| <b>Orbit Period</b>                     | 248 Years                             |
| <b>Equatorial Diameter</b>              | 2,400 Kilometers                      |
| <b>Atmosphere (Main Constituents)</b>   | Nitrogen,<br>Carbon Monoxide, Methane |
| <b>Inclination of Orbit to Ecliptic</b> | 17.2°                                 |
| <b>Eccentricity of Orbit</b>            | 0.25                                  |
| <b>Rotation Period</b>                  | 6.387 Days                            |
| <b>Inclination of Axis</b>              | ~120°                                 |
| <b>Moon</b>                             | Charon                                |
| <b>Charon's Diameter</b>                | 1,210 Kilometers                      |

## About the Image

*This artist's conception of the Pluto-Charon binary planet was conceived and executed by Pat Rawlings of Science Applications International Corporation. Pluto is represented in the background; Charon is in the foreground. The drawing depicts Pluto's true color, bright polar cap, tenuous atmosphere, and dark equatorial band. Notice how much brighter Pluto's surface is than Charon's. The craters and other geological features depicted are based on educated guesses about the kinds of features a flyby spacecraft might detect.*



*А/В*

СССР-КУБА

**ЦЕНТР  
УПРАВЛЕНИЯ  
ПОЛЕТАМИ**

