

114

- 11

Polyakhova Ye.M.

Solar radiation pressure and the motion of Earth satellites.

AIAA Journal 1963 1 Nr 12 2893-2909.

- 12

Sehnał J.

The dynamical effects of the solar radiations pressure in the motion of artificial satellites.

Bull.Astron.Inst.Czech. 1963 14 Nr 4 133-134.

The changes of the semi-major axis and the eccentricity are computed. With the numerical constants corresponding to the orbit of Echo 1 the change of -10 cm in the semi-major axis per one revolution of the satellite is found.

- 13

Sehnał Ladislav

The effect of the re-radiation of the sunlight from the Earth on the motion of artificial satellites.

The Use of Art.Sat. for Geodesy 1963 113-114.

- 14

Shapiro Irwin I.

Effects of sunlight pressure on air density determinations involving cylindrical satellites.

J.Geophys.Res. 1963 68 Nr 19 5349-54.

- 15

Sirinian Michele D.

Stabilita dei veicoli spaziali nel campo di una sorgente luminosa.

Missili.Riv.Assoc.Ital.Razzi 1962 4 13-18.

- 16

Socio Luciano de

Effetti dinamici della radiazione solare sui mobili spaziali.

Missili.Rev.Assoc.Ital.Razzi 1962 2 Nr 2 5-12.

- 17

Wyatt S.P.

The effect of radiation pressure on the secular acceleration of satellites.

SAO Spec.Rept 1961 Nr 60.

- 18

Wyatt Stanley P.

The effect of radiation pressure on secular acceleration of satellites.

Smiths.Contrib.Astroph. 1963 6 113-123.

- 19

Wyatt P.Stanley

The effect of terrestrial radiation pressure on satellite orbits.

Dynamics of Satellites 1963 180-196.

12

THEORY OF THE MOTION OF ARTIFICIAL SATELLITES OF THE MOON

- 1

Arenstorf Richard F.

Existence of periodic solutions passing near both masses of the restricted three-body problem.

AIAA Journal 1963 1 Nr 1 238-240.

- 2

Arenstorf Richard F., Davidson Mirt C.Jr.

Solutions of restricted three-body problem represented by means of two-fixed-center problem.

AIAA Journal 1963 1 Nr 1 228-230.

- 3

Benedikt E.T.

Exact determination of the lunar mass by means of selenoid satellites.

Nature /E/ 1961 192 Nr 4801 442-443.

Method for exact determination of the lunar mass by means of artificial satellites placed in libration points.

- 4

Bielicki Maciej

Niektóre problemy torów lotów księżycowych.

Postępy Astronomii 1960 8 Nr 2 73-100.

- 5

Bielicki M.

Trasy lotów księżycowych.

Urania 1959 30 Nr 1 1-20.

- 6

Breakwell J.V., Koehler L.P.

Elliptical orbit lifetimes.

Proc.Amer.Astronaut.Soc. 1958 34/1 - 34/5.

- 7

Ciudin-Podlovsky Camelia

Consideratii asupra transformarii unei rachete in satelit permanent al Lunii.

Studii si cercetari astron. si seismol. 1962 7 Nr 2 277-279.

- 8

Colombo G.

Instability of motion at the Lagrangian triangular point in the Earth-Moon system. Discussion on the paper: Exact determination of the lunar mass by means of selenoid satellites by E.T.Benedikt-Author's reply.

Nature /E/ 1962 193 Nr 4820 1063.

- 9

Colombo G.

The stabilization of an artificial satellite at the inferior conjunction point of the Earth-Moon system.

SAO Spec.Rept 1961 Nr 80

- 10

Colombo G., Lautman D.A.

On some singular orbits of an Earth-Moon satellite with a high area-mass ratio.

SAO Spec.Rept. 1962 Nr 107. 1-14.

12

11

Faust H.

Mondsatellit und Venusmond.

Naturwiss.Rundschau 1961 14 Nr 2 75

Conditions required for orbits of artificial satellites of the Moon and Venus.

- 12

Gasley C., Masson D.J.

Recovery of a circum-lunar instrument carrier

8-th Internat.Astronaut.Congr.Barcelona 1957 Wien 1958 137-146.

- 13

Goldbaum G.C., Gunkel R.J.

Comparison of two-dimensional and three dimensional analyses of Earth-Moon flight.

Proc.Amer.Astronaut.Soc.1958 34/1 - 34/5.

- 14

Hiller H.

Entry into elliptic orbits round the Moon,

Planet and Space Sci. 1963 11 Nr 2 111-124.

- 15

Hiller H.

A generalized study of two dimensional trajectories of a vehicle in Earth-Moon space.

Astronaut.Acta 1962 8 Nr 2-3 82-104.

- 16

Huang Su-Shu, Wade Clarence Jr.

Preliminary study of periodic orbits of interest for Moon probes II.

The Astron.Journal 1963 68 Nr 1311 388-391.

- 17

Kelly Thomas J., Adornato Rudolph J.

Determination of orbit way-stations on a nominal circumlunar trajectory.

ARS Journal 1962 32 Nr 6 887-893.

- 18

Lagerstrom P.A., Keyorkian J.

Matched-conic approximation to the two fixed force-center problem.

The Astron.Journal 1963 68 Nr 1307 84-92.

Study on motion of a particle with negligible mass, in neighborhood of masses equal to  $1-\mu$  and  $\mu$ , where  $\mu \ll 1$ .

- 19

Lass Harry, Solloway Carleton B.

Motion of a satellite of the Moon.

ARS Journal 1961 31 Nr 2 220-222.

Problem of motion of an artificial lunar satellite in the attraction field of the Earth and the Moon.

- 20

Marshall William C.

Calculus of perturbations applied to lunar mission analysis.

Progr.of Astronaut.and Rocketry. 1962 147-194.

12

- 21

Mickelwait A.B., Booton R.C.

Analytical and numerical studies of three dimensional trajectories to the Moon.

IAS Paper 1959 Nr 90 37 pp.

Considerations on the problem of free flight of a satellite from Earth to Moon from the viewpoint of: a/ the effect of deflections between initial parameters and the assumed ones, b/ an energetically optimal orbit obtained for a given locus and time.

- 22

Musen Peter

On a modification of Hansen's lunar theory.

J.Geophys.Res 1963 68 Nr 5 1439-56.

A modification of Hansen's lunar theory is given in a form that permits a purely numerical treatment of solar perturbations of planetary satellites, or of perturbations caused by the Earth in the motion of hypothetical lunar satellite.

- 23

Newton R.R.

Motion of a satellite around an unsymmetrical central body.

J.Appl.Phys. 1959 30 Nr 1 115-117.

Theory on the motion of a material point around an asymmetric body. Example: motion of the lunar satellite around the Moon.

- 24

Schechter H.B.

Multibody influence on the least altitude of a lunar satellite.

ARS Journal 1962 32 Nr 12 1924-23.

- 25

Schechter H.B., McGann J.V.

Gravitational force field in the vicinity of Earth-Moon Libration points.

AIAA Journal 1963 1 Nr 3 843-847.

- 26

Sedov L.I.

Orbits of cosmic rockets toward the Moon.

ARS Journal 1960 30 Nr 1 14-21.

Problem of the rocket motion in the gravitational field of the Earth, the Moon and the Sun. Orbital characteristics of three Soviet lunar rockets are given.

- 27

Singer S.F.

Scientific problems in cislunar space and their exploration with rocket vehicles.

Astronaut.Acta 1959 5 Nr 2 116-125.

- 28

Sterne T.E.

Note on R.R.Newton's paper "Motion of a satellite around an unsymmetrical central body"

J.Appl.Phys. 1959 30 Nr 2 270.

12

- 29

Stewart P.A.E.

Lunar satellites.

J.Brit.Interplanet.Soc. 1963 19 Nr 2 52

- 30

Tross Carl

Lunar vehicle orbit determination

ARS Journal 1962 32 Nr 4 582.

The Encke's method is applied for lunar vehicle ephemeris prediction. It is possible to calculate the ephemeris for an Earth-Moon trajectory only 15 integration steps and to maintain precision everywhere along the orbit to within 1/2 mile.

- 31

X X X

Wade explorer lunar probe control.

Aviat.Week and Space Technol. 1958 69 Nr 4 37-39.

Study of the case of a rocket revolving around the Moon and entering into the Earth atmosphere.

13

**THEORY OF THE MOTION OF ARTIFICIAL SATELLITES OF OTHER PLANETS.**

- 1

Faust H.

Mondsatellit und Venusmond.

Naturwiss.Rundschaun 1961 14 Nr 2 75

Conditions required for orbits of artificial satellites of the Moon and Venus.

- 2

Kooy J.M.J., Berghuis J.

Numerical investigation of the disturbing influence of the Sun on a Venus satellite.

Astronaut.acta 1963 9 Nr 2 59-80.

## THEORY OF THE MOTION OF ARTIFICIAL ASTEROIDS

- 1

Baker R.M.L.Jr.

Influence of planetary mass uncertainty on inter-planetary orbits.

ARS Journal 1962 32 Nr 12 1919-21.

- 2

Bielicki M.

Lot księżycowy rakiety kosmicznej i nowa planeta Układu Słonecznego.

Problemy 1959 15 Nr 2 82-85.

- 3

Brick Donald B.

An interesting observation on the point release into orbit of a number of objects.

ARS Journal 1961 31 Nr 2 270-271.

Problem of motion of several bodies ejected from the rocket into different directions with the same velocity.

- 4

Feenberg Eugene.

Orbit to the Sun.

Amer.J.Phys. 1960 28 Nr 5 497-498.

- 5

Finkle William R.

Generalized three-dimensional trajectory analysis of planetary escape by solar sail.

ARS Journal 1962 32 Nr 6 883-886.

- 6

Greenwood S.W.

Reconnaissance orbits normal to the ecliptic plane.

J.Roy.Aeronaut.Soc. 1961 65 Nr 606 436-437.

Examination of possibilities and conditions for introducing the satellite into the orbit around the Sun, normal to the ecliptic plane.

- 7

I Chzhao-hua, Huan Tian-i

The approximate minimum-time orbit of a spaceship from Earth to Mars.

Acta astron.Sinica 1961 9 Nr 1-2 38-41.

- 8

Lesky Peter

Lösung des dreidimensionalen Vierkörperproblems. Sonne, Erde, Mond und Raumschiff.

Sympos.Numerical Treatm.Ordinary Differential Equation, Integral and Integro-differential Equations. Berlin-Stuttgart, Birkhäuser 1960 15-21.

Numerical method for solving the problem of four bodies: Sun, Earth, Moon and cosmic vehicle.

- 9

Mc Guire James B., Spangler Eugene R.

The size of solar system.

Scient.Amer. 1961 204 Nr 4 64-72

Solar parallax value determined from observations of the rocket Pioneer V.

- 10

Mellin Marschall

Pioneer V and the scale of the solar system.

Sky and Telescope 1960 20 Nr 6 337

Results of determination of the astronomical unit by measurement of the distance to the rocket Pioneer V.

- 11

x x x

Probing the Sun

Aeroplane and Astronaut. 1961 101 Nr 2599 156-159.

Description of a cosmic rocket designed for exploration of the Sun radiation and supposed to approach to the orbits of Venus and Mercury.

- 12

Ross Stanley.

The orbital motion of pellet clouds.

Preprint.7-th Annual Meet.Amer.Astronaut.Soc. 1961 Nr 31.

Theory of motion of clouds consisting of particles ejected in the space from rockets.

15

ROTATIONAL MOTION OF SATELLITE

- 1

Arendt P.R.

Anomalies of the geomagnetic retardation of the spin of satellite Vanguard I /1958 Beta/.

ARS Journal 1961 31 Nr 3 286-289.

Information on variations in the proper motion of satellite Vanguard I around its axis, produced by the magnetic field of the Earth.

- 2

Auelmann Richard R.

Regions of libration for a symmetrical satellite.

AIAA Journal 1963 1 Nr 6 1445-47.

- 3

Beletsky V.V.

The libration of a satellite on an elliptic orbit. Dynamics of Satellites 1963 219-230.

- 4

Bracewell R.M.

Satellite rotation.

Advances Astronaut.Sci. 1959 4 317-328

Theory of spin motion of a satellite with a symmetric shape in relation to the rotation axis.

- 5

Bracewell R.M., Garriott O.K.

Rotation of Artificial earth satellites.

Nature /E/ 1958 182 Nr 4638 760-762

Description of the method for determination of the satellite rotation on the base of variations in recording of signals transmitted by the satellite. As example the registration of signals from Sputnik III is given.

- 6

Doubochine G.N.

Sur le mouvement de translation-rotation des corps celestes artificiels.

Dynamics of Satellites 1963 14-20

Report summarising several publications of the author, relating to the rotational motion of artificial satellites.

- 7

Fletcher H.J., Rongved L., Yu E.Y.

Dynamics analysis of a two-body gravitationally orientated satellite.

Bell System Techn.J. 1963 42 Nr 5 2239-69

- 8

Grasshoff L.H.

Influence of gravity on satellite spin axis attitude.

ARS Journal 1960 30 Nr 12 1174-1175

- 9

Hagihara Yusuke

Libration of an Earth satellite with critical inclination.

Smiths.Contrib.Astroph. 1961 5 Nr 5 39-51.

Theory of rotation of a satellite with orbit inclination near  $63^{\circ}4'$ .

15

- 10

Hagihara Yusuke

Rotation of an Earth satellite in flight along its orbit.

Smiths.Contrib.Astroph. 1961 5 Nr 9 113-143

- 11

Klemperer, Baker

Satellite librations

Astronaut Acta 1957 3 Nr 1 16-27

- 12

Margulies E., Goodman G.S.

Dynamical equations for the attitude matrix of an orbiting satellite.

ARS Journal 1962 32 Nr 9 1414

- 13

Mass Jonathan

Deduction of satellite orientation from Faraday fading measurements.

Proc.IRE 1962 50 Nr 4 466.

- 14

Moran John P.

Effect of plane librations on the orbital motion of a dumbbell satellite.

ARS Journal 1961 31 Nr 8 1089-96

Theory of motion of satellite having the shape of two conjugated spheres, in the gravitational field of a homogeneous sphere.

- 15

Oberth H.

A precise altitude control for artificial satellites.

Vistas Astronaut. 1958 217-255.

Described is the method of orientating the artificial satellite in the space by using a pendulum placed inside the satellite.

- 16

Paul B.

Planar librations of an extensible dumbbell satellite.

AIAA Journal 1963 1 Nr 2 411-418.

- 17

Rosenstock H.

The effect of the earth's magnetic on the spin of the satellite.

Astronaut Acta 1957 3 Nr 3 215-221.

- 18

Rowell L.N., Smith M.C.

Effect of geometrical libration on the damped motion of an earth satellite.

ARS Journal 1961 31 Nr 3 361-364.

- 19

Sarychev V.A.

Effect of Earth's oblateness on the rotational motion of an artificial Earth satellite.

ARS Journal 1962 32 Nr 5 834-838.

15

- 20

Schareello D.M.

Aerodynamic influences on satellite libration.

ARS Journal 1961 31 Nr 3 442-444.

- 21

Schindler G.M.

Satellite librations in the vicinity of equilibrium solutions.

Astronaut. Acta 1960 6 Nr 5 233-240.

Theory of motion of a satellite consisting of two rigidly connected material points.

152

DETERMINATIONS OF ROTATIONAL MOTION

- 1

Beletsky V.V.

Problems of motion of artificial satellites about the center of mass.

Dynamics of Satellites 1963 158-167

An example of determining the orientation elements in space of Sputnik III is presented.

- 2

Beletskii V.V., Zonov Yu.V.

Rotation and orientation of soviet sputnik III.

AIAA Journal 1963 1 Nr 3 748-757

- 3

Colombo G.

The motion of satellite 1958 Epsilon around its center of mass.

SAO Spec.Rept 1961 Nr 70

- 4

Colombo G.

The motion of satellite 1958 Epsilon around its center of mass.

Smiths.Contrib.Astroph. 1963 6 149-163.

- 5

Colombo G.

On the motion of Explorer XI around its center of mass.

SAO Spec.Rept. 1962 Nr 94 1-25

- 6

Lockwood G.E.

Spin rate of the satellite Echo I as determined by a tracking radar.

Canadian J.Phys. 1960 38 Nr 12 1713

Determination of the proper motion of Echo I from radio observations

- 7

Naumann Robert J.

Observed torque-producing forces acting on satellites.

Dynamics of Satellites 1963 237-256.

Proper motions of Explorers IV, VII, VIII and IX are determined.

- 8

Nauman Robert J.

Recent information gained from satellite orientation measurement.

Planet and Space Sci. 1961 7 445-453.

- 9

Naumann R.J., Fields S.A., Holland R.L.

Analysis of Explorer 11 orientation

J.Geophys.Res. 1962 67 Nr 9 3619-23

-10

Heirincq Pierre

L'étude photométrique de Sputnik III /1958 Delta 2/ revele son troisieme mouvement.

l'Astronomie 1960 74 163-170.

Determination of the proper motion of Sputnik III

152

- 11

Notni P., Oleak H.

Der Lichtwechsel der Trägerrakete von Sputnik III.  
Monatsber.D.Akade.Wiss. 1959 1 Nr 7-10 394-396

Photographic observations of the carrying rocket  
Sputnik III analyzed from the viewpoint of investi-  
gations on the brightness variations, period of  
revolution and position of the rocket in space.

- 12

Notni Peter, Oleak Hans

Die Rotation der Trägerrakete von Sputnik III  
/1958 Delta 1/.

Veröff.Sternwarte Babelsberg 1959 13 Nr 4 1-26

- 13

Notni P., Oleak H.

Rotation period of the artificial satellite 1958  
Delta 1

Nature /E/ 1961 189 Nr 4766 737-738.

Polemic with C.R.Faulkner /Nature 1960, nr 4741/  
and his reply to the critical comments.

- 14

Warwick J.W.

Decay of spin in Sputnik I

Planet and Space Sci. 1959 I Nr 1 43-49

Determination of the rotation motion of the sate-  
llite around its mass center - basing on radio  
observations.

16

THE METHODS OF COMPUTING OF ORBITS

- 1

Anderson R.A.

A simple method of plotting the track of an Earth  
satellite.

J.Brit.Interplanet Soc. 1958 16 Nr 6 355-361

- 2

Arendt P.R., Manamon L.H.

A simple method for the supervision of the orbital  
period of artificial satellites.

Proc.IRE 1961 49 Nr 11 1698-99

Nomographical method for computing the revolu-  
tion period of satellite.

- 3

Ashbrook J., Schilling G.F., Sterne T.E.

Glossary of astronomical terms for the descrip-  
tion of satellite orbits.

Smiths.Centr.Astroph. 1958 2 Nr 10 211-218

- 4

Baker R.M.L.Jr., et al.

Efficient precision orbit computation techniques

ARS Journal 1960 30 Nr 8 740-747

- 5

Baker Robert M.L., Jr.

The elimination of spurious data in the process  
of preliminary and definitive orbit determina-  
tion.

Dynamics of Satellites 1963 1-13

- 6

Baran Włodzimierz

Determination of the distance of the artificial  
Earth satellite, based on simultaneous observa-  
tions undertaken from the surface of the Earth.

Conf. devoted to Observ. of Art.Sat.and their  
Use for Geodesy 1963 45-48

- 7

Barlier P.

Determination des éléments instantanés d'un sa-  
tellite artificiel à partir de l'observation d'un  
passage.

Space Research II 1961 83-90

- 8

Bieniewski Jan

Obliczenie elementów orbity sztucznego satelity  
Ziemi w przypadku obserwacji jednoczesnych wyko-  
nanych przez dwie stacje.

Biul.Pol.Obs.Sst.Sat. 1963 Nr 8 58-65

Calculation of elements of the satellite orbit  
for the case of simultaneous observations made  
at two stations.

- 9

Boryczka Jerzy

Wyznaczenie wysokości satelity kołowego z jednej  
obserwacji współrzędnych i ich pochodnych wzglę-  
dem czasu.

Biul.Pol.Obs.Sst.Sat. 1961 Nr 5 29-39

Determination of the distance of a satellite with  
a quasi-circular orbit - on the basis of one ob-

16

servation of the coordinates and their derivatives in relation to time.

- 10

Briggs R.E., Slowsy J.W.

An iterative method of orbit determination from three observations of a nearby satellite.

SAO Spec.Rept 1959 Nr 27 1-8

- 11

Bryant R.W.

Interim definitive orbits determined at the NASA Computing Center.

Seminar Proc.: Tracking Programs and orbit Determination, Jet Propulsion Lab, Calif.Inst.Tech. 1960 108-113.

- 12

Camerin Mario

Satelliti artificiali e traietorie

Riv.catasto e serv.tech.erariali 1960 15 Nr 4 312-337.

- 13

Carrara N.

Determination of the orbit of an artificial satellite.

Proc.IRE 1959 47 Nr 1 75

- 14

Ceplecha Z.

The computation of sputniks orbit independent of time data.

Biul.Astron.Inst.Czech. 1959 10 Nr 2 41-42.

- 15

Cichowicz L.

Obserwacje i wyznaczenie orbit sztucznych satelitów Ziemi.

Rocznik Astronomiczny 1960 15 121-131.

- 16

Duke D.

Orbit determination from optical tracking

J. Soc. of Motion Picture and Television Engrs. 1960 Nr 69 9-14

- 17

Elyasberg P.E.

The determination of an orbit from two positions.

Planet.and Space Sci. 1963 11 Nr 4 395-415

- 18

Freisleben H.C.

Navigational aid from other satellites.

J.Inst.Navig. 1962 15 Nr 2 149-154

Method of defining the topocentric distance of satellite on the ground of measurements of azimuth and altitude and their changes.

- 19

Giese R.H.

Attitude determination from specular and diffuse reflection by cylindrical artificial satellites.

SAO Spec.Rept. 1963 Nr 127 1-41.

Formulae for attitude determination from the observed topocentric coordinates of specular reflec-

16

tion flashes of satellite and the direction of the Sun. For diffuse reflecting cylinders the formula for the intensity as a function of arbitrary angles of illumination and observation is derived and applied to numerical computations.

- 20

Herrick Samuel

A comparison of astronomical and ballistic traditions in orbit correction.

Dynamics of Satellites 1963 51-64.

- 21

Höhne W., Nitschmann H.J.

Bestimmung von Flughöhen künstlicher Erdsatelliten auf Grund visueller Beobachtungen im Programm INTEROBS.

Mitt.Sternwarte Bautzen 1963 Nr 1 1-8.

In this publication a method is given for determining the height of a satellite above the earth's surface. The Bautzen School observatory and satellite Tracking Station 1120 has shown this method at the example of the artificial earth satellites 1960 Iota 1 and 1962 A x i 2

- 22

Holloway Leith

Alignment chart for satellite orbit calculations.

J.Astronaut.Sci 1961 8 Nr 2 60-61

Description of nomogram for approximated calculation of the motion of the ascending node and the perigee of the satellite orbit.

- 23

Ill M.

Bahnbestimmung von künstlichen Erdsatelliten auf grund visueller Beobachtungen.

Baja Varosi Tanacs Csillag. 1962 Nr 1 3-18

- 24

Issak Imre G.

Differential orbit improvement with the use of rotated residuals.

SAO Spec.Rept. 1961 Nr 73

- 25

Issak Imre G.

Differential orbit improvement with the use of rotated residuals.

Space Age Astronomy 1962 151-157

- 26

Jacchia Luigi G.

Program for determination of geographic subsatellite points.

SAO Spec.Rept. 1958 Nr 11 18

Described is the method of computing the coordinates of subsatellite points from the known orbital elements.

- 27

Janiczek R.

Uproszczone wzory na obliczenie czasu obiegu i odległości sztucznych satelitów.

Astronautyka 1958 Nr 1 19-20.

16

- 28  
Kadakia Pravin L.  
Combination of least-squares approximations in the case of correlated variables.  
SAO Spec.Rept. 1963 Nr 122 1-10.
- 29  
Klee Ernst  
Photographische Grossbasismessung von Satellitenbahnen.  
Weltraumfahrt 1961 12 Nr 6 171-177.  
Method for determination of the altitude of satellites by means of simultaneous basic observations carried out at three stations: Berlin, Bohum and Munich.
- 30  
Kovalevsky J.  
Valeur des éléments moyens d'un satellite déduits de l'observation d'un passage.  
Space Research II 1961 91-101.
- 31  
Krimser P.G., Wakabayashi I.  
Determination of simultaneous points in overlapping satellite traces observed from N stations.  
Photogr.Sci.and Engng 1963 7 Nr 1 20-25.
- 32  
Kustaanheimo Paul  
Ueber die Bestimmung oskulieren den Bahn eines künstlichen Erdsatelliten.  
Comm.Phys.-Math.Soc.Sci.Fennica 1961 26 Nr 1  
Method for determination of the satellite orbit from three observations carried out by one or more than one station.
- 33  
Luetjen H.N., Ramey M.L.  
Orbit relative ships.  
Space Aeronaut. 1959 31 Nr 3 122-138  
Nomograms linking different orbital elements of satellite are presented.
- 34  
Merson R.H.  
A Pegasus computer programme for the improvement of the orbital parameters of an earth-satellite  
Dynamics of Satellites 1963 83-110.
- 35  
Michielsen H.F.  
The use of medium-accuracy observations for orbit studies of artificial satellites.  
Photogr.Science and Engng 1962 6 Nr 6 338-344.  
Possibilities of using observations with accuracy of  $1' - 2'$  in position and  $0.01 - 0.02$  in time for computing orbital elements for geodetic-geographical purposes.
- 36  
Moe Kenneth  
Errors in orbital predictions for artificial satellite of Earth.  
Nature /E/ 1961 192 Nr 4798 151  
Analysis of accuracy in determination of orbital elements according to the intensity of solar activity.

16

- 37  
Opalski Wiesław  
Wsory robocze wiążące pozycje obserwowane sztuczne-go satelity Ziemi z jego położeniem na orbicie.  
Biul.Pol.Obs.Szt.Sat. 1960 Nr 2 99-105  
Working formulae connecting observed horizontal coordinates of an artificial satellite with its orbital position.
- 38  
Osborne J.M.  
Ranging the satellite by Doppler shift observation.  
Short Wave Magazin 1957 15 Nr 9 459-462.
- 39  
Pieczynski Leopold  
O paralaksie sztucznych satelitów.  
Biul.Pol.Obs.Szt.Sat. 1961 Nr 5 18-28  
The parallax of the Earth's artificial satellites.
- 40  
Pieczynski Leopold  
Zagadnienie przeliczania współrzędnych topocentrycznych na geocentryczne w zastosowaniu do sztucznych satelitów Ziemi.  
Geodezja i Kartografia 1962 11 Nr 1 45-74.
- 41  
Richards Paul B.  
Preliminary orbit determination of a nontransmitting satellite using the DOPILOC tracking system.  
ARS Journal 1961 31 Nr 12 1729-33.  
Method for preliminary determination of the orbit of satellite without radio transmitter - on the basis of the Doppler effect measurement during a single revolution.
- 42  
Růkí Antonín  
Sledujemy drahy kosmických raket.  
Říše hvězd. 1960 41 Nr 2 25-28  
Method of presenting the trajectory of the cosmic rocket with the help of the projection on the equator plane and the plane perpendicular to the equator.
- 43  
Sconzo Pasquale  
Il problema della determinazione dell'orbita di un satellite artificiale.  
Current Res.Astronaut Sci. 1961 29-42
- 44  
Siry Joseph W.  
Progress in orbit determination.  
Space Age Astronomy. 1962 142-150.  
Review paper presenting methods and objectives of computation of artificial satellite orbits.
- 45  
Siry J.W.  
The Vanguard orbit determination program.  
Annals Int.Geophys.Yr. 1960 12 Nr 1 91-104
- 46  
Slack P.F., Sandberg A.A.  
Tracking and display of earth satellite.

16

Proc.IRE, 1960 48 Nr 4 655-663  
Modelling of the trajectory of an artificial satellite with the help of a special electronic device.

- 47  
Slowey J.

A chart for finding a satellite's distance and elevation.

Sky and Telescope 1958 17 Nr 5

- 48  
Smith O.K.

Computation of coordinates from Brouwer's solution of the artificial satellite problem.

The Astron.Journal 1961 66 Nr 1292 359-360

- 49  
Sochilina A.S.

Determination of orbits based on visual and photographic observations.

Dynamics of Satellites 1963 202-204

- 50  
Sochilina A.S.

Some modifications in method of improving the orbits of artificial Earth satellites.

AIAA Journal 1963 1 Nr 12 2909-11

- 51  
Stoddard Laurence

Prediction of eclipses of earth satellites.

Amer.Astronaut.Soc.Preprints. 1961 Nr 79

Method of computing the eclipse time of satellite, illustrated by numerical examples.

- 52  
Swerling P.

First order error propagation in a stagewise smoothing procedure for satellite observations.

J.Astronaut.Sci. 1959 6 Nr 3 46-52

Problem of processing observations of artificial satellite in the case they are made at certain intervals separating one from another.

- 53  
Szebehely V.

The generalized inverse problem of orbit computation.

Space Research II 1961 318-338.

- 54  
Tempelman Wayne

A graphical approach to the determination of the eccentricity and the perigee angle.

J.Aero-Space Sci. 1960 27 Nr 8 630-631

Graphical method for definition of elements of an artificial satellite.

- 55  
Veis George

Precise aspects of terrestrial and celestial reference frames.

SAO Spec.Rept. 1963 Nr 123 1-16

Three distinct reference systems are used in an processing of satellite observations: a terrestrial system for earth-fixed points, a cele-

16

tial system for observations, and an orbital system for the orbital elements. In the paper these reference systems are defined, and their precise relation established.

- 56  
Vinti John P.

Formulas for an accurate intermediary orbit of an artificial satellite.

The Astron.Journal 1961 66 Nr 1294 514-516.

- 57  
Vinti J.P.

The spheroidal method for satellite orbits.

The Use of Art.Sat. for Geodesy 1963 12-16.

To calculate the orbit of a satellite of an oblate planet, the author has devised a very accurate approximation for its gravitational potential, leading to separability of the problem in oblate spheroidal coordinates. The paper sketches the procedures for finding this potential and for calculating the corresponding orbit.

- 58  
Wallace Robert

Graphic solution of some earth satellite problems by use of the stereographic net.

J.Brit.Interplanet.Soc. 1959 17 Nr 5 120-123

Nomographical method of determination of the artificial satellite orbit. An example is given of determining the orbit of Sputniks I and II.

- 59  
West C.T., Goodstein R.

On the simplification of the attitude equations of a satellite.

Techn.Session Preprints Amer.Astronaut.Soc. 1960 Nr 13

- 60  
Whipple Fred L.

Fundamental problems in predicting positions of artificial satellites.

Proc.Sympos. Appl.Math. 1959 9 36-47.

Principles and methods for computations of orbits of artificial Earth satellites - carried out in the USA during the International Geophysical Year.

- 61  
Wörner H.

Die Berechnung von Bahnelementen künstlicher Satelliten.

Sterne 1958 34 Nr 3-4 56-63

CUMPUTING OF ORBITS ON THE GROUND OF RADIO-OBSERVATIONS

- 1  
Barrar R.B., Deutsch R.  
Determination of satellite trajectories from track-while scan radar measurements.  
IRE Trans.Milit.Electron. 1961 5 Nr 4 306-311

- 2  
Besag Peter L., Anderson Julian T.  
Determination of the orbit of an artificial satellite.  
Proc.IRE. 1960 48 Nr 5 950  
A brief review of methods for finding the position of a satellite from radioobservations.

- 3  
Boudouris G.  
A method for interpreting the Doppler curves of artificial satellites.  
J.Brit.Inst.Radio Engrs 1960 20 Nr 12 933-935.

- 4  
Boyer Wesley D.  
A duplex Doppler phase comparison radar.  
IRE Internat.Convent.Rec. 1960 10 Nr 5 25-31.

- 5  
Carrara Nello, Checcacci Pier Francesco, Ronchi Laura  
Determination of the orbit of an artificial satellite by means of four Doppler stations.  
Space Research II. 1961 215-218.

- 6  
Cohen Paul L., Deutsch Armin J.  
Error analysis for Doppler determined satellite orbits of other planets.  
ARS Journal 1961 31 Nr 12 1767-68.

- 7  
Cole Roger W., Deutsch Ralph  
Gibbs' approximation with distance measurements.  
ARS Journal 1962 32 Nr 9 1401-03.  
Formulae for computation of the geocentric radius vector from radio observations.

- 8  
Deutsch Armin J.  
Orbits for planetary satellites from Doppler data alone.  
ARS Journal 1960 30 Nr 6 536-542.  
Theory of computation of orbits of artificial Earth satellites and other planets on the basis of observation of the Doppler effect.

- 9  
Gabbard Taylor, Baker R.M.L.Jr.  
Lunar radio beacon location by Doppler measurements.  
AIAA Journal 1963 1 Nr 4 864-867

- 10  
Guier W.H.  
Theoretical analysis of Doppler radio signals from Earth Satellites.  
Nature /E/ 1958 181 Nr 4622 1525-26

- 11  
Harris I., Jastrow R., Cahill W.F.  
Determination of satellite orbits from radio tracking data.  
Proc.IRE 1959 47 Nr 5 851-854

- 12  
Hopfield H.S.  
The effect of tropospheric refraction on the Doppler shift of a satellite signal.  
J.Geophys.Res. 1963 68 Nr 18 5157-68

- 13  
Issak I.G.  
Orbit determination from simultaneous doppler-shift measurements.  
SAO Spec.Rept 1960 Nr 38

- 14  
Kitchen F.A.  
Direction - finding observations on the 20 Mc/S transmissions from the artificial earth satellites.  
Proc.Roy.Soc. 1958 248 Nr 1252 65-68.

- 15  
Mass J., Vassy E.  
Doppler effect of artificial satellites.  
Adv.in Space Sci. and Technol. 1962 1-38  
Description of observational methods, instrumentation, methods of orbit determination and observations used for other purposes.

- 16  
Musen Peter  
Contributions to the theory of satellite orbits.  
Space Research 1960 434-447  
The method for the rapid determination of satellite orbit from radar measurements is described.

- 17  
Newton Robert R.  
Geodetic measurements by analysis of the Doppler frequency received from a satellite.  
Space Research 1960 532-539.

- 18  
Patton R.B.  
Orbit determination from single pass Doppler observations.  
IRE Trans.Milit.Electron 1960 4 Nr 2-3 336-34

- 19  
Patton R.B., Richard V.W./Jr./  
Determination of orbital elements and refraction effects from single pass Doppler observations.  
Space Research II 1961 218-244

- 20  
x x x

Proposed system checks satellite's first orbit.  
Missiles and Rockets 1962 11 Nr 15 18-19

- 21

Radary E.

Analysis of minimal data orbit determination by a single radar site.

Advances Astronaut.Sci. Plenum Press. 1961 55-71.

- 22

Richards Paul B.

Orbit determination of a non-transmitting satellite using Doppler tracking data.

Amer.Rocket Soc.Preprints 1961 Nr 141 11

- 23

Sconzo Pasquale

Explicit expressions for the 36 terms of a Jacobian matrix used in orbit computations.

Mem.Soc.Astron.Ital. 1963 34 Nr 2 217-232

- 24

Sconzo P.

The use of Lambert's theorem in orbit determination.

The Astron.Journal 1962 66 Nr 1296 19-21

Theory of orbit determination from radar observations

- 25

Vakhnin V.M.

Influence of the Earth's orbital motion on radar measurements of range and velocity in space.

AIAA Journal 1963 1 Nr 11 2700-03

Translated from russian

- 26

Wanie Gustav, Schmidt Karl Heinz

Dopplereffektmessungen und Bahnbestimmung von Sputnik 3

Wiss.Z.F.Schiller Univ. Jena 1958/59 8 Nr 2/3 241-246

Method and results of computations of orbital elements of the satellite Sputnik III, carried out on the basis of the Doppler effect.

DETERMINATIONS OF ORBITS

- 1

Adams R.M., Briggs R.E., Upton E.K.L.

Positions of satellite 1957 Beta One during the first 100 revolutions.

SAO Spec.Rept. 1958 Nr 15

- 2

Baker R.M.L./Jr., Douglas B.C., Newell D., Stazer A.K., Held R.L., Lifson M.

Determination of the orbit of the Russian Venus probe.

ARS Journal 1962 32 Nr 2 259-260.

Geo- and heliocentric orbit of the Soviet interplanetary station, computed from data contained in TASS announcements.

- 3

Berlier F.

Etude de l'accélération du mouvement d'Echo observe a Meudon.

The Use of Art.Sat.for Geodesy, 1963 115-119.

- 4

Bryant R.

A comparison of theory and observation of the Echo I satellite.

J.Geophys.Res. 1961 66 Nr 9 3066-69

Irregularities observed in the motion of satellite Echo I, produced by the great surface/mass ratio.

- 5

Burt E.G.C.

The computation of orbit parameters from interferometer and Doppler data.

Proc.Roy.Soc. 1958 A248 Nr 1252 48-55.

- 6

Cichowicz L., Zieliński I.

Zagadnienie pozycyjnych obserwacji sztucznych satelitów Ziemi oraz wyznaczania współrzędnych geograficznych punktów podsatelitowych.

Geodezja i Kartografia 1960 9 Nr 3-4 160-196.

- 7

Cook G.E., Hughes Janice M.

The orbits of needle satellite.

Planet and Space Sci. 1962 9 153-166

Calculations concerning the West-Ford dipoles.

- 8

Czczot O.

Rappresentazione grafica dell'orbita del primo satellite artificiale americano.

Antenna 1958 30 Nr 2 55-56

- 9

Güntzel-Lingner U.

Abnahme der Umlaufzeit von sputnik 3 zwischen 15 Mai und 31 August 1958.

Mitt.Ergebn.des Sat.Beob. Nr 2 15-18

17

- 10  
Güntzel-Lingner U.  
Die Bahnbewegung der sovietischen Rakete Lunik 3.  
Wiss.und Fortschr. 1960 10 Nr 2 46-48

- 11  
Harris I., Jastrow R.  
Re-entry of the sputnik I rocket  
Planet. and Space Sci. 1959 1 Nr 1 37-39.  
Finding, by means of calculus, of the descent  
point of Sputnik I carrying rocket.

- 12  
Jacchia L.G.  
The descent of satellite 1957 Beta 1  
IGY World Data Center Rockets and Satellites 1958  
Nr 6 25-38

- 13  
Jacchia Luigi G.  
The descent of satellite 1957 Beta 1.  
Smiths.Contrib.Astroph. 1963 6 5-12

- 14  
Jacchia L.G.  
The diurnal effect in the orbital acceleration of  
satellite 1957 Beta 1.  
SAO Spec.Rept 1959 Nr 20 5-8

- 15  
Jacchia Luigi G.  
The diurnal effect in the orbital acceleration of  
satellite 1957 Beta 1.  
Smiths.Contrib.Astroph. 1963 6 29-30

- 16  
Jacchia Luigi G.  
Life expectancy of satellite 1958 Alpha  
SAO Spec.Rept. 1958 Nr 11 16  
A formula is given and applied to the case of sa-  
tellite 1958 Alpha, allowing for the life time of  
a satellite to be determined.

- 17  
Jacchia Luigi G.  
Orbital results for satellite 1957 Beta 1.  
Smiths.Contrib.Astroph. 1963 6 1-4

- 18  
Jacchia L.G.  
The secular perturbations and orbital acceleration  
of satellites 1958 Beta 2  
IGY World Data Center Rockets and Satellites 1958  
Nr 4 23-26.

- 19  
Jacchia L.G., Briggs R.E.  
Orbital acceleration of Satellite 1958 Beta 2.  
SAO Spec.Rept. 1958 Nr 18 9-12

- 20  
Jacchia Luigi G., Briggs R.E.  
Orbital acceleration of satellite 1958 Beta 2.  
Smiths. Contrib.Astroph. 1963 6 13-15.

17

- 21  
King-Hele D.G.  
The descent of an Earth satellite through the up-  
per atmosphere.  
J.Brit.Interplanet Soc. 1956 15 Nr 6 314-23.

- 22  
King-Hele D.G., Merson R.H.  
Satellite orbit in theory and practice.  
J.Brit.Interplanet Soc. 1958 16 Nr 8 446-471.  
Comparison between orbital elements of two arti-  
ficial satellites, obtained by theoretical deduc-  
tion and from observations.

- 23  
Kitchen F.A.  
Direction-finding observations on the 20 Mc/s  
transmissions from the artificial Earth satellites.  
Proc.Roy.Soc. 1958 A248 Nr 1252 63-68  
Radio observations of Sputnik I and computation of  
the orbit from those observations.

- 24  
Kozai Yoshihide, Whitney Charles  
Anticipated orbital perturbations of satellite 1959  
Delta 2.  
SAO Spec.Rept. 1959 Nr 30.

- 25  
Kozai Yoshihide, Whitney Charles A.  
Anticipated orbital perturbations of satellite 1959  
Delta 2.  
Smiths.Contrib.Astroph. 1963 6 69-71

- 26  
Leger R.  
Trajectory computation in systems design.  
Space Trajectories 1960 119-140.  
Description of the Convair Computing Center at San  
Diego /USA/, dealing with orbit computations. Me-  
thod and computation programs are given

- 27  
Lenzi E., Presenza E.  
Calcolo della orbite del satelliti.  
Riv.Aeronaut. 1959 35 Nr 2 233-258  
Example of the computation of orbital elements.

- 28  
Leonard A.S.  
Determination of the orbit of Satellite 1958 Be-  
ta 1.  
SAO Spec.Rept 1959 Nr 27 9.

- 29  
Lundquist Charles A., Vanderburgh Richard C.,  
Munn Walter A., Tilles David, Fireman Edward L.,  
De Felice James  
Re-entry and recovery of fragments of satellite  
1960 Delta 1  
SAO Spec.Rept. 1962 Nr 109 1-23.

- 30  
May B.R.  
The approaching descent of Sputnik 3 /1958 Delta 2/  
Nature /E/ 1960 185 Nr 4715 729-730

17

Description of variations in the motion of Sputnik 3 within the period May 1959 - January 1960.

- 31

May B.R., Smith D.E.

The continued progress of satellite 1958 Delta 2 /Sputnik III/

Nature /E/ 1959 184 Nr 4689 765-767

Computation of changes in the revolution period of the Sputnik from November 1st to December 20th, 1958

- 32

May B.R., Smith D.E.

Final months and descent of Satellite Sputnik 3.

Nature /E/ 1960 187 Nr 4736 456-458.

Given are the computation results of orbital elements of Sputnik 3 within the period May 1959 - April 1960.

- 33

May B.R., Smith D.E.

The sudden discontinuity in the orbital period of Sputnik 4 satellite.

Nature /E/ 1960 187 Nr 4740 866-867.

Observation of the very moment when the effort was made to bring the Sputnik 4 down to the Earth.

- 34

Merson R.H.

A Pegasus computer programme for the improvement of the orbital parameters of an earth-satellite.

Dynamics of Satellites 1963 83-110.

An example is presented of computing some orbital elements of Sputnik 2.

- 35

Message P.J.

On Mr. King-Hele theory of the effect of the Earth's oblateness on the orbit of a close satellite.

Monthly Notices 1960 121 Nr 1 1-4

Development of the King-Hele theory of satellite motion in the gravitational field of the Earth

- 36

Michaels J.E., Wachman M., Petty A.

Lunik III trajectory predictions.

Advances Astronaut.Sci.Macmillan Co N.Y. 1961 244-251.

- 37

x x x

New gap: US, USSR astronomical units.

Missiles and Rockets 1961 8 Nr 22-23.

Inconistencies between American and Soviet determinations of the astronomical unit by means of cosmic rockets.

- 38

Nigam Rajendra C.

The revised orbit of Satellite 1958 Zeta.

SAO Spec.Rept. 1961 Nr 64

- 39

Oswalden M.

Wir berechnen die Flughöhe der künstlichen Satelliten

Universum 1958 13 Nr 5 133-134

17

- 40

Paetzold H.K.

The fluctuations of the acceleration of satellites.

J.Atmos.and Terr.Phys. 1959 16 Nr 3-4 259-262.

Computation results and interpretation of variations in the acceleration of satellites: 1957 Beta, 1958 Delta 1, 1958 Delta 2 and 1958 Beta 2.

- 41

Reuyl D.

Orbit measurements of an artificial earth satellite /Sputnik II/ from photographs taken with a tracking ballistic telescope system.

BRL Technical Note 1957 Nr 1156.

- 42

x x x

Satellite computer

Automat.Control 1957 6 Nr 1 8

- 43

Schilling G.F., Rinehart J.S.

Note on the mass-area ratios of the USSR satellites.

SAO Spec.Rept. 1958 Nr 12 16-18

Approximate evaluation of ballistic parameters of satellites: 1957 Alpha 1 and 1957 Beta from variations observed in their motion.

- 44

Schilling G.F., Whitney C.A., Polkart B.M.

Preliminary note on the mass-area ratios of satellites 1958 Delta 1 and 1958 Delta 2.

SAO Spec.Rept. 1958 Nr 14 32-33.

- 45

Shapiro Irwin J., Jones Harrison M.

Lifetimes of orbiting dipoles.

Science 1961 134 Nr 3484 973-979.

Determination of the orbit of metallic dipoles released in the space according to the West-Ford project.

- 46

Siry I.

The determination of the orbit of 1958 Beta at the Vanguard Computing center.

IGY World Data Center Rockets and Satellites 1958 Nr 3 17-24.

- 47

Stockwell Richard E.

Data collecting and processing at the Pacific Missile Range.

Automat.and Automatic Equipm.News 1961 6 Nr 6 306-310.

Description of the Californian rocket base from which, among others, are launched "Discoverers".

- 48

Takemuchi T.

Orbital elements of the artificial satellite 1958 Epsilon.

Space Research 1960 466-475.

Numerical example is given by using the data obtained with the Foker-Rom Camera at the Tokyo Astronomical Observatory in 1958.