Dataset Discription: NASA Exoplanet Archive

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Status	Completed
Project Phase	Data Collection
Target Audience	Developers, Project Managers
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Overview: This document describes the primary data source and the supplementary Data Dictionary created to translate astronomical parameters into machine learning features.

1. Initial Dataset: NASA Confirmed Planets

The core of this project relies on the **NASA Exoplanet Archive's Planetary Systems (PS) Table**. This is a self-consistent, comprehensive database of all confirmed exoplanets discovered to date.

- **Source:** NASA Exoplanet Archive
- **Nature of Data:** The dataset contains observational parameters for exoplanets and their host stars, collected from peer-reviewed scientific literature.
- **Initial Scale:** 39212 rows × 288 columns.
- **Key Data Points:** * **Planetary Parameters:** Orbit, Mass, Radius, Density, Temperature.
    - **Stellar Parameters:** Temperature, Mass, Radius, Luminosity, Age, Metallicity.
    - **System Parameters:** Distance from Earth, Brightness (Magnitudes), Galactic Coordinates.

2. Secondary Dataset: Data Column Discription

Because the initial NASA dataset uses abbreviated scientific headers (e.g., `pl_orbper`), a secondary mapping dataset was created. This "Data Column Dictionary" serves as the translation layer between raw astronomical data and each data column discription.

The table below provides a granular breakdown of all 263 active columns used in this project.

S.No	Column Previous Name	Column Full Name	Description	Purpose
1	pl_name	Planet Name	Full name of the exoplanet.	Metadata
2	hostname	Host Name	Name of the host star.	Metadata
3	pl_letter	Planet Letter	Assigned letter (b, c, d, etc.).	Metadata
4	hd_name	HD ID	ID in Henry Draper Catalogue.	Metadata
5	hip_name	HIP ID	ID in Hipparcos Catalogue.	Metadata
6	tic_id	TIC ID	ID in TESS Input Catalog.	Metadata
7	gaia_dr2_id	Gaia DR2 ID	ID from Gaia Data Release 2.	Metadata
8	gaia_dr3_id	Gaia DR3 ID	ID from Gaia Data Release 3.	Metadata
9	default_flag	Default Parameter Set	1 if this is the best row for this planet; 0 if not.	Filter
10	sy_snum	Number of Stars	Number of stars in the system.	Feature
11	sy_pnum	Number of Planets	Number of known planets in the system.	Feature
12	sy_mnum	Number of Moons	Number of known moons in the system.	Feature
13	cb_flag	Circumbinary Flag	1 if the planet orbits two stars.	Feature
14	discoverymethod	Discovery Method	Method used to find the planet.	Feature

15	disc_year	Discovery Year	Year of confirmation.	Feature
16	disc_refname	Discovery Reference	Text citation for the discovery.	Drop
17	disc_pubdate	Discovery Publication Date	Date the discovery was published.	Drop
18	disc_locale	Discovery Locale	Ground-based or Space-based observation.	Feature
19	disc_facility	Discovery Facility	Name of the observatory.	Feature
20	disc_telescope	Discovery Telescope	Name of the telescope used.	Feature
21	disc_instrument	Discovery Instrument	Name of the instrument used.	Feature
22	rv_flag	Detected by Radial Velocity Variations	1 if radial velocity detected the planet.	Feature
23	pul_flag	Detected by Pulsar Timing Variations	1 if pulsar timing detected the planet.	Feature
24	ptv_flag	Detected by Pulsation Timing Variations	1 if pulsation timing detected the planet.	Feature
25	tran_flag	Detected by Transits	1 if the transit method detected it.	Feature
26	ast_flag	Detected by Astrometric Variations	1 if astrometric variations were used.	Feature
27	obm_flag	Detected by Orbital Brightness Modulations	1 if orbital brightness modulation used.	Feature
28	micro_flag	Detected by Microlensing	1 if microlensing was the method.	Feature
29	etv_flag	Detected by Eclipse Timing Variations	1 if eclipse timing was used.	Feature
30	ima_flag	Detected by Imaging	1 if direct imaging detected it.	Feature

31	dkin_flag	Detected by Disk Kinematics	1 if disk kinematics detected it.	Feature
32	soltype	Solution Type	The type of confirmed solution.	Filter
33	pl_controv_flag	Controversial Flag	1 if existence is controversial.	Filter
34	pl_refname	Planetary Parameter Reference	Text citation for the parameters.	Drop
35	pl_orbper	Orbital Period [days]	Time for one orbit in Earth days.	Feature
36	pl_orbpererr1	Orbital Period Upper Unc. [days]	Upper margin of error for period.	Feature
37	pl_orbpererr2	Orbital Period Lower Unc. [days]	Lower margin of error for period.	Feature
38	pl_orbperlim	Orbital Period Limit Flag	Indicates if period is an exact value.	Feature
39	pl_orbsmax	Orbit Semi-Major Axis [au]	Average distance from the star.	Feature
40	pl_orbsmaxerr1	Orbit Semi-Major Axis Upper Unc. [au]	Upper margin of error for distance.	Feature
41	pl_orbsmaxerr2	Orbit Semi-Major Axis Lower Unc. [au]	Lower margin of error for distance.	Feature
42	pl_orbsmaxlim	Orbit Semi-Major Axis Limit Flag	Indicates if distance is exact.	Feature
43	pl_rade	Planet Radius [Earth Radius]	Radius of planet (Earth = 1).	Feature
44	pl_radeerr1	Planet Radius Upper Unc. [Earth Radius]	Upper margin of error for radius.	Feature
45	pl_radeerr2	Planet Radius Lower Unc. [Earth Radius]	Lower margin of error for radius.	Feature
46	pl_radelim	Planet Radius Limit Flag	Indicates if radius is exact.	Feature

47	pl_radj	Planet Radius [Jupiter Radius]	Radius in Jupiter units.	Drop
48	pl_radjerr1	Planet Radius Upper Unc. [Jupiter Radius]	Error in Jupiter units.	Drop
49	pl_radjerr2	Planet Radius Lower Unc. [Jupiter Radius]	Error in Jupiter units.	Drop
50	pl_radjlim	Planet Radius Limit Flag	Limit flag in Jupiter units.	Drop
51	pl_masse	Planet Mass [Earth Mass]	Mass of the planet (Earth = 1). 2	Feature
52	pl_masseerr1	Planet Mass [Earth Mass] Upper Unc.	Upper margin of error for Earth mass.	Feature
53	pl_masseerr2	Planet Mass [Earth Mass] Lower Unc.	Lower margin of error for Earth mass.	Feature
54	pl_masselim	Planet Mass [Earth Mass] Limit Flag	1 if mass is an upper/lower limit.	Feature
55	pl_massj	Planet Mass [Jupiter Mass]	Mass in Jupiter units.	Drop
56	pl_massjerr1	Planet Mass [Jupiter Mass] Upper Unc.	Error in Jupiter units.	Drop
57	pl_massjerr2	Planet Mass [Jupiter Mass] Lower Unc.	Error in Jupiter units.	Drop
58	pl_massjlim	Planet Mass [Jupiter Mass] Limit Flag	Limit flag in Jupiter units.	Drop
59	pl_msinie	Planet Mass*sin(i) [Earth Mass]	Minimum mass ($M \sin i$) in Earth units.	Feature
60	pl_msinieerr1	Planet Mass*sin(i) [Earth Mass] Upper Unc.	Upper error for minimum mass.	Feature

61	pl_msinieerr2	Planet Mass*sin(i) [Earth Mass] Lower Unc.	Lower error for minimum mass.	Feature
62	pl_msinielim	Planet Mass*sin(i) [Earth Mass] Limit Flag	Limit flag for minimum mass.	Feature
63	pl_msinij	Planet Mass*sin(i) [Jupiter Mass]	Minimum mass in Jupiter units.	Drop
64	pl_msinijerr1	Planet Mass*sin(i) [Jupiter Mass] Upper Unc.	Error in Jupiter units.	Drop
65	pl_msinijerr2	Planet Mass*sin(i) [Jupiter Mass] Lower Unc.	Error in Jupiter units.	Drop
66	pl_msinijlim	Planet Mass*sin(i) [Jupiter Mass] Limit Flag	Limit flag in Jupiter units.	Drop
67	pl_cmasse	Planet Mass*sin(i)/sin(i) [Earth Mass]	Calculated mass from other parameters.	Feature
68	pl_cmasseerr1	Planet Mass*sin(i)/sin(i) [Earth Mass] Upper Unc.	Upper error for calculated mass.	Feature
69	pl_cmasseerr2	Planet Mass*sin(i)/sin(i) [Earth Mass] Lower Unc.	Lower error for calculated mass.	Feature
70	pl_cmasselim	Planet Mass*sin(i)/sin(i) [Earth Mass] Limit Flag	Limit flag for calculated mass.	Feature

71	pl_cmassj	Planet Mass*sin(i)/sin(i) [Jupiter Mass]	Calculated mass in Jupiter units.	Drop
72	pl_cmassjerr1	Planet Mass*sin(i)/sin(i) [Jupiter Mass] Upper Unc.	Error in Jupiter units.	Drop
73	pl_cmassjerr2	Planet Mass*sin(i)/sin(i) [Jupiter Mass] Lower Unc.	Error in Jupiter units.	Drop
74	pl_cmassjlim	Planet Mass*sin(i)/sin(i) [Jupiter Mass] Limit Flag	Limit flag in Jupiter units.	Drop
75	pl_bmasse	Planet Mass or Mass*sin(i) [Earth Mass]	The "best" mass value (Mass or Msini).	Feature
76	pl_bmasseerr1	Planet Mass or Mass*sin(i) [Earth Mass] Upper Unc.	Upper error for best mass.	Feature
77	pl_bmasseerr2	Planet Mass or Mass*sin(i) [Earth Mass] Lower Unc.	Lower error for best mass.	Feature
78	pl_bmasselim	Planet Mass or Mass*sin(i) [Earth Mass] Limit Flag	Limit flag for best mass.	Feature
79	pl_bmassj	Planet Mass or Mass*sin(i) [Jupiter Mass]	Best mass in Jupiter units.	Drop
80	pl_bmassjerr1	Planet Mass or Mass*sin(i) [Jupiter Mass] Upper Unc.	Error in Jupiter units.	Drop

81	pl_bmassjerr2	Planet Mass or Mass*sin(i) [Jupiter Mass] Lower Unc.	Error in Jupiter units.	Drop
82	pl_bmassjlim	Planet Mass or Mass*sin(i) [Jupiter Mass] Limit Flag	Limit flag in Jupiter units.	Drop
83	pl_bmassprov	Planet Mass or Mass*sin(i) Provenance	Source of the mass measurement.	Feature
84	pl_dens	Planet Density [g/cm**3]	Density (g/cm^3). 3	Feature
85	pl_denserr1	Planet Density Upper Unc. [g/cm**3]	Upper margin of error for density.	Feature
86	pl_denserr2	Planet Density Lower Unc. [g/cm**3]	Lower margin of error for density.	Feature
87	pl_denslim	Planet Density Limit Flag	Limit flag for density.	Feature
88	pl_orbeccen	Eccentricity	How non-circular the orbit is.	Feature
89	pl_orbeccenerr1	Eccentricity Upper Unc.	Upper error for eccentricity.	Feature
90	pl_orbeccenerr2	Eccentricity Lower Unc.	Lower error for eccentricity.	Feature
91	pl_orbeccenlim	Eccentricity Limit Flag	Limit flag for eccentricity.	Feature
92	pl_insol	Insolation Flux [Earth Flux]	Energy received (Earth = 1). 4	Feature
93	pl_insolerr1	Insolation Flux Upper Unc. [Earth Flux]	Upper error for insolation.	Feature
94	pl_insolerr2	Insolation Flux Lower Unc. [Earth Flux]	Lower error for insolation.	Feature
95	pl_insollim	Insolation Flux Limit Flag	Limit flag for insolation.	Feature

96	pl_eqt	Equilibrium Temperature [K]	Surface temperature (K). 5	Feature
97	pl_eqterr1	Equilibrium Temperature Upper Unc. [K]	Upper error for temperature.	Feature
98	pl_eqterr2	Equilibrium Temperature Lower Unc. [K]	Lower error for temperature.	Feature
99	pl_eqtlim	Equilibrium Temperature Limit Flag	Limit flag for temperature.	Feature
100	pl_orbincl	Inclination [deg]	Tilt of the orbit (degrees).	Feature
101	pl_orbinclerr1	Inclination Upper Unc. [deg]	Upper margin of error for the orbit's tilt angle.	Feature
102	pl_orbinclerr2	Inclination Lower Unc. [deg]	Lower margin of error for the orbit's tilt angle.	Feature
103	pl_orbincllim	Inclination Limit Flag	Indicates if the inclination value is an exact measurement.	Feature
104	pl_tranmid	Transit Midpoint [days]	The specific time of the center of a transit event.	Feature
105	pl_tranmiderr1	Transit Midpoint Upper Unc. [days]	Upper margin of error for the transit timing.	Feature
106	pl_tranmiderr2	Transit Midpoint Lower Unc. [days]	Lower margin of error for the transit timing.	Feature
107	pl_tranmidlim	Transit Midpoint Limit Flag	Indicates if the transit time is an exact value.	Feature
108	pl_tsystemref	Time Reference Frame and Standard	The reference frame and standard used for timing data.	Metadata
109	ttv_flag	Data show Transit Timing Variations	1 if the planet's transit times shift due to other planets.	Feature
110	pl_imppar	Impact Parameter	The closest distance between planet and star center in transit.	Feature

111	pl_impparerr1	Impact Parameter Upper Unc.	Upper margin of error for the impact parameter.	Feature
112	pl_impparerr2	Impact Parameter Lower Unc.	Lower margin of error for the impact parameter.	Feature
113	pl_impparlim	Impact Parameter Limit Flag	Indicates if the impact parameter is an exact value.	Feature
114	pl_trandep	Transit Depth [%]	The percentage drop in star brightness during transit.	Feature
115	pl_trandeperr1	Transit Depth Upper Unc. [%]	Upper margin of error for the transit depth.	Feature
116	pl_trandeperr2	Transit Depth Lower Unc. [%]	Lower margin of error for the transit depth.	Feature
117	pl_trandeplim	Transit Depth Limit Flag	Indicates if the transit depth is an exact value.	Feature
118	pl_trandur	Transit Duration [hours]	The total time the planet takes to cross the star.	Feature
119	pl_trandurerr1	Transit Duration Upper Unc. [hours]	Upper margin of error for transit duration.	Feature
120	pl_trandurerr2	Transit Duration Lower Unc. [hours]	Lower margin of error for transit duration.	Feature
121	pl_trandurlim	Transit Duration Limit Flag	Indicates if the transit duration is an exact value.	Feature
122	pl_ratdor	Ratio of Semi-Major Axis to Stellar Radius	Ratio of the planet's distance to its star's radius.	Feature
123	pl_ratdorerr1	Ratio of Semi-Major Axis to Stellar Radius Upper Unc.	Upper margin of error for the distance-radius ratio.	Feature

124	pl_ratdorerr2	Ratio of Semi-Major Axis to Stellar Radius Lower Unc.	Lower margin of error for the distance-radius ratio.	Feature
125	pl_ratdorlim	Ratio of Semi-Major Axis to Stellar Radius Limit Flag	Indicates if the distance-radius ratio is exact.	Feature
126	pl_ratror	Ratio of Planet to Stellar Radius	Ratio of the planet's radius to its star's radius.	Feature
127	pl_ratrorerr1	Ratio of Planet to Stellar Radius Upper Unc.	Upper margin of error for the radius ratio.	Feature
128	pl_ratrorerr2	Ratio of Planet to Stellar Radius Lower Unc.	Lower margin of error for the radius ratio.	Feature
129	pl_ratrorlim	Ratio of Planet to Stellar Radius Limit Flag	Indicates if the radius ratio is exact.	Feature
130	pl_occdep	Occultation Depth [%]	Drop in brightness when the planet passes behind the star.	Feature
131	pl_occdeperr1	Occultation Depth Upper Unc. [%]	Upper margin of error for occultation depth.	Feature
132	pl_occdeperr2	Occultation Depth Lower Unc. [%]	Lower margin of error for occultation depth.	Feature
133	pl_occdeplim	Occultation Depth Limit Flag	Indicates if the occultation depth is exact.	Feature
134	pl_orbtper	Epoch of Periastron [days]	Time when the planet is at its closest point to the star.	Feature
135	pl_orbtpererr1	Epoch of Periastron Upper Unc. [days]	Upper margin of error for the periastron time.	Feature
136	pl_orbtpererr2	Epoch of Periastron Lower Unc. [days]	Lower margin of error for the periastron time.	Feature

137	pl_orbtperlim	Epoch of Periastron Limit Flag	Indicates if the periastron time is exact.	Feature
138	pl_orblper	Argument of Periastron [deg]	Angle describing the orientation of the orbit in space.	Feature
139	pl_orblpererr1	Argument of Periastron Upper Unc. [deg]	Upper margin of error for the periastron angle.	Feature
140	pl_orblpererr2	Argument of Periastron Lower Unc. [deg]	Lower margin of error for the periastron angle.	Feature
141	pl_orblperlim	Argument of Periastron Limit Flag	Indicates if the periastron angle is exact.	Feature
142	pl_rvamp	Radial Velocity Amplitude [m/s]	The speed of the star's "wobble" in meters per second.	Feature
143	pl_rvamperr1	Radial Velocity Amplitude Upper Unc. [m/s]	Upper margin of error for the radial velocity.	Feature
144	pl_rvamperr2	Radial Velocity Amplitude Lower Unc. [m/s]	Lower margin of error for the radial velocity.	Feature
145	pl_rvamplim	Radial Velocity Amplitude Limit Flag	Indicates if the radial velocity value is exact.	Feature
146	pl_projobliq	Projected Obliquity [deg]	Planet's axial tilt relative to the orbit (2D projection).	Feature
147	pl_projobliqerr1	Projected Obliquity Upper Unc. [deg]	Upper margin of error for projected tilt.	Feature
148	pl_projobliqerr2	Projected Obliquity Lower Unc. [deg]	Lower margin of error for projected tilt.	Feature
149	pl_projobliqlim	Projected Obliquity Limit Flag	Indicates if the projected tilt is exact.	Feature

150	pl_trueobliq	True Obliquity [deg]	The actual 3D axial tilt (spin axis) of the planet.	Feature
151	pl_trueobliqerr1	True Obliquity Upper Unc. [deg]	Upper error for the planet's 3D axial tilt3.	Feature
152	pl_trueobliqerr2	True Obliquity Lower Unc. [deg]	Lower error for the planet's 3D axial tilt4.	Feature
153	pl_trueobliqlim	True Obliquity Limit Flag	Flag indicating if the true obliquity is an exact value5.	Feature
154	st_refname	Stellar Parameter Reference	Text citation for the stellar parameters6.	Drop
155	st_spectype	Spectral Type	The classification of the star based on its light spectrum7.	Feature
156	st_teff	Stellar Effective Temperature [K]	Effective temperature of the star in Kelvin88.	Feature
157	st_tefferr1	Stellar Effective Temperature Upper Unc. [K]	Upper margin of error for star temperature9.	Feature
158	st_tefferr2	Stellar Effective Temperature Lower Unc. [K]	Lower margin of error for star temperature10.	Feature
159	st_tefflim	Stellar Effective Temperature Limit Flag	Flag for star temperature measurement limits11.	Feature
160	st_rad	Stellar Radius [Solar Radius]	Radius of the star relative to our Sun1212.	Feature
161	st_raderr1	Stellar Radius Upper Unc. [Solar Radius]	Upper margin of error for stellar radius13.	Feature
162	st_raderr2	Stellar Radius Lower Unc. [Solar Radius]	Lower margin of error for stellar radius14.	Feature
163	st_radlim	Stellar Radius Limit Flag	Flag for stellar radius measurement limits15.	Feature

164	st_mass	Stellar Mass [Solar mass]	Mass of the star relative to our Sun1616.	Feature
165	st_masserr1	Stellar Mass Upper Unc. [Solar mass]	Upper margin of error for stellar mass17.	Feature
166	st_masserr2	Stellar Mass Lower Unc. [Solar mass]	Lower margin of error for stellar mass18.	Feature
167	st_masslim	Stellar Mass Limit Flag	Flag for stellar mass measurement limits19.	Feature
168	st_met	Stellar Metallicity [dex]	The abundance of heavy elements in the star20.	Feature
169	st_meterr1	Stellar Metallicity Upper Unc. [dex]	Upper margin of error for metallicity21.	Feature
170	st_meterr2	Stellar Metallicity Lower Unc. [dex]	Lower margin of error for metallicity22.	Feature
171	st_metlim	Stellar Metallicity Limit Flag	Flag for stellar metallicity limits23.	Feature
172	st_metratio	Stellar Metallicity Ratio	The ratio used to measure metallicity (e.g., [Fe/H])24.	Feature
173	st_lum	Stellar Luminosity [log(Solar)]	Logarithmic measure of the star's total power output25.	Feature
174	st_lumerr1	Stellar Luminosity Upper Unc. [log(Solar)]	Upper margin of error for stellar luminosity26.	Feature
175	st_lumerr2	Stellar Luminosity Lower Unc. [log(Solar)]	Lower margin of error for stellar luminosity27.	Feature
176	st_lumlim	Stellar Luminosity Limit Flag	Flag for stellar luminosity limits28.	Feature
177	st_logg	Stellar Surface Gravity [log10(cm/s**2)]	The gravity at the star's surface ($log10(cm/s^2)$).	Feature

178	st_loggerr1	Stellar Surface Gravity Upper Unc. [log10(cm/s**2)]	Upper margin of error for stellar gravity.	Feature
179	st_loggerr2	Stellar Surface Gravity Lower Unc. [log10(cm/s**2)]	Lower margin of error for stellar gravity.	Feature
180	st_logglim	Stellar Surface Gravity Limit Flag	Flag for stellar gravity limits.	Feature
181	st_age	Stellar Age [Gyr]	Age of the star in billions of years.	Feature
182	st_ageerr1	Stellar Age Upper Unc. [Gyr]	Upper margin of error for star age.	Feature
183	st_ageerr2	Stellar Age Lower Unc. [Gyr]	Lower margin of error for star age.	Feature
184	st_agelim	Stellar Age Limit Flag	Flag for star age limits.	Feature
185	st_dens	Stellar Density [g/cm**3]	Density of the star in g/cm^3.	Feature
186	st_denserr1	Stellar Density Upper Unc. [g/cm**3]	Upper margin of error for star density.	Feature
187	st_denserr2	Stellar Density Lower Unc. [g/cm**3]	Lower margin of error for star density.	Feature
188	st_denslim	Stellar Density Limit Flag	Flag for star density limits.	Feature
189	st_vsin	Stellar Rotational Velocity [km/s]	Speed at which the star rotates at its equator.	Feature
190	st_vsinerr1	Stellar Rotational Velocity [km/s] Upper Unc.	Upper margin of error for rotational velocity.	Feature
191	st_vsinerr2	Stellar Rotational Velocity [km/s] Lower Unc.	Lower margin of error for rotational velocity.	Feature
192	st_vsinlim	Stellar Rotational Velocity Limit	Flag for rotational velocity limits.	Feature

		Flag		
193	st_rotp	Stellar Rotational Period [days]	Time it takes the star to complete one rotation.	Feature
194	st_rotperr1	Stellar Rotational Period [days] Upper Unc.	Upper margin of error for rotational period.	Feature
195	st_rotperr2	Stellar Rotational Period [days] Lower Unc.	Lower margin of error for rotational period.	Feature
196	st_rotplim	Stellar Rotational Period Limit Flag	Flag for rotational period limits.	Feature
197	st_radv	Systemic Radial Velocity [km/s]	The systemic motion of the star relative to the Sun.	Feature
198	st_radverr1	Systemic Radial Velocity Upper Unc. [km/s]	Upper margin of error for radial velocity.	Feature
199	st_radverr2	Systemic Radial Velocity Lower Unc. [km/s]	Lower margin of error for radial velocity.	Feature
200	st_radvlim	Systemic Radial Velocity Limit Flag	Flag for radial velocity limits.	Feature
201	sy_refname	System Parameter Reference	Text citation for the system-level parameters.	Drop
202	rastr	RA [sexagesimal]	Right Ascension in hours:minutes:seconds format.	Metadata
203	ra	RA [deg]	Right Ascension (celestial longitude) in degrees.	Metadata
204	decstr	Dec [sexagesimal]	Declination in degrees:minutes:seconds format.	Metadata
205	dec	Dec [deg]	Declination (celestial latitude) in degrees.	Metadata
206	glat	Galactic Latitude [deg]	Latitude of the system relative to the Milky Way plane.	Metadata

207	glon	Galactic Longitude [deg]	Longitude of the system relative to the Galactic Center.	Metadata
208	elat	Ecliptic Latitude [deg]	Latitude relative to the Earth's orbital plane.	Metadata
209	elon	Ecliptic Longitude [deg]	Longitude relative to the Earth's orbital plane.	Metadata
210	sy_pm	Total Proper Motion [mas/yr]	The total observed angular motion of the star per year.	Feature
211	sy_pmerr1	Total Proper Motion Upper Unc [mas/yr]	Upper margin of error for total proper motion.	Feature
212	sy_pmerr2	Total Proper Motion Lower Unc [mas/yr]	Lower margin of error for total proper motion.	Feature
213	sy_pmra	Proper Motion (RA) [mas/yr]	Proper motion component in the Right Ascension direction.	Feature
214	sy_pmraerr1	Proper Motion (RA) [mas/yr] Upper Unc	Upper margin of error for PM in Right Ascension.	Feature
215	sy_pmraerr2	Proper Motion (RA) [mas/yr] Lower Unc	Lower margin of error for PM in Right Ascension.	Feature
216	sy_pmdec	Proper Motion (Dec) [mas/yr]	Proper motion component in the Declination direction.	Feature
217	sy_pmdecerr1	Proper Motion (Dec) [mas/yr] Upper Unc	Upper margin of error for PM in Declination.	Feature
218	sy_pmdecerr2	Proper Motion (Dec) [mas/yr] Lower Unc	Lower margin of error for PM in Declination.	Feature
219	sy_dist	Distance [pc]	Distance from Earth to the system in Parsecs.	Metadata
220	sy_disterr1	Distance [pc] Upper Unc	Upper margin of error for system distance.	Metadata

221	sy_disterr2	Distance [pc] Lower Unc	Lower margin of error for system distance.	Metadata
222	sy_plx	Parallax [mas]	The apparent shift of the star used to calculate distance.	Feature
223	sy_plxerr1	Parallax [mas] Upper Unc	Upper margin of error for parallax measurement.	Feature
224	sy_plxerr2	Parallax [mas] Lower Unc	Lower margin of error for parallax measurement.	Feature
225	sy_bmag	B (Johnson) Magnitude	Apparent brightness in the Blue (Johnson) filter.	Feature
226	sy_bmagerr1	B (Johnson) Magnitude Upper Unc	Upper margin of error for B-band magnitude.	Feature
227	sy_bmagerr2	B (Johnson) Magnitude Lower Unc	Lower margin of error for B-band magnitude.	Feature
228	sy_vmag	V (Johnson) Magnitude	Apparent brightness in the Visual (Johnson) filter.	Feature
229	sy_vmagerr1	V (Johnson) Magnitude Upper Unc	Upper margin of error for V-band magnitude.	Feature
230	sy_vmagerr2	V (Johnson) Magnitude Lower Unc	Lower margin of error for V-band magnitude.	Feature
231	sy_jmag	J (2MASS) Magnitude	Apparent brightness in the J-band (Infrared).	Feature
232	sy_jmagerr1	J (2MASS) Magnitude Upper Unc	Upper margin of error for J-band magnitude.	Feature
233	sy_jmagerr2	J (2MASS) Magnitude Lower Unc	Lower margin of error for J-band magnitude.	Feature
234	sy_hmag	H (2MASS) Magnitude	Apparent brightness in the H-band (Infrared).	Feature
235	sy_hmagerr1	H (2MASS) Magnitude Upper Unc	Upper margin of error for H-band magnitude.	Feature

236	sy_hmagerr2	H (2MASS) Magnitude Lower Unc	Lower margin of error for H-band magnitude.	Feature
237	sy_kmag	Ks (2MASS) Magnitude	Apparent brightness in the K-band (Infrared).	Feature
238	sy_kmagerr1	Ks (2MASS) Magnitude Upper Unc	Upper margin of error for K-band magnitude.	Feature
239	sy_kmagerr2	Ks (2MASS) Magnitude Lower Unc	Lower margin of error for K-band magnitude.	Feature
240	sy_umag	u (Sloan) Magnitude	Apparent brightness in the Ultraviolet (Sloan) filter.	Feature
241	sy_umagerr1	u (Sloan) Magnitude Upper Unc	Upper margin of error for u-band magnitude.	Feature
242	sy_umagerr2	u (Sloan) Magnitude Lower Unc	Lower margin of error for u-band magnitude.	Feature
243	sy_gmag	g (Sloan) Magnitude	Apparent brightness in the Green (Sloan) filter.	Feature
244	sy_gmagerr1	g (Sloan) Magnitude Upper Unc	Upper margin of error for g-band magnitude.	Feature
245	sy_gmagerr2	g (Sloan) Magnitude Lower Unc	Lower margin of error for g-band magnitude.	Feature
246	sy_rmag	r (Sloan) Magnitude	Apparent brightness in the Red (Sloan) filter.	Feature
247	sy_rmagerr1	r (Sloan) Magnitude Upper Unc	Upper margin of error for r-band magnitude.	Feature
248	sy_rmagerr2	r (Sloan) Magnitude Lower Unc	Lower margin of error for r-band magnitude.	Feature
249	sy_imag	i (Sloan) Magnitude	Apparent brightness in the Near-Infrared (Sloan) filter.	Feature

250	sy_imagerr1	i (Sloan) Magnitude Upper Unc	Upper margin of error for i-band magnitude.	Feature
251	sy_imagerr2	i (Sloan) Magnitude Lower Unc	Lower margin of error for i-band (near-infrared) magnitude.	Feature
252	sy_zmag	z (Sloan) Magnitude	Apparent brightness in the z-band (Infrared/Sloan).	Feature
253	sy_zmagerr1	z (Sloan) Magnitude Upper Unc	Upper margin of error for z-band magnitude.	Feature
254	sy_zmagerr2	z (Sloan) Magnitude Lower Unc	Lower margin of error for z-band magnitude.	Feature
255	sy_w1mag	W1 (WISE) Magnitude	Brightness in the WISE W1 band (3.4 microns).	Feature
256	sy_w1magerr1	W1 (WISE) Magnitude Upper Unc	Upper margin of error for W1 magnitude.	Feature
257	sy_w1magerr2	W1 (WISE) Magnitude Lower Unc	Lower margin of error for W1 magnitude.	Feature
258	sy_w2mag	W2 (WISE) Magnitude	Brightness in the WISE W2 band (4.6 microns).	Feature
259	sy_w2magerr1	W2 (WISE) Magnitude Upper Unc	Upper margin of error for W2 magnitude.	Feature
260	sy_w2magerr2	W2 (WISE) Magnitude Lower Unc	Lower margin of error for W2 magnitude.	Feature
261	sy_w3mag	W3 (WISE) Magnitude	Brightness in the WISE W3 band (12 microns).	Feature
262	sy_w3magerr1	W3 (WISE) Magnitude Upper Unc	Upper margin of error for W3 magnitude.	Feature
263	sy_w3magerr2	W3 (WISE) Magnitude Lower Unc	Lower margin of error for W3 magnitude.	Feature

264	sy_w4mag	W4 (WISE) Magnitude	Brightness in the WISE W4 band (22 microns).	Feature
265	sy_w4magerr1	W4 (WISE) Magnitude Upper Unc	Upper margin of error for W4 magnitude.	Feature
266	sy_w4magerr2	W4 (WISE) Magnitude Lower Unc	Lower margin of error for W4 magnitude.	Feature
267	sy_gaiamag	Gaia Magnitude	Apparent brightness as measured by the Gaia mission.	Feature
268	sy_gaiamagerr1	Gaia Magnitude Upper Unc	Upper margin of error for Gaia magnitude.	Feature
269	sy_gaiamagerr2	Gaia Magnitude Lower Unc	Lower margin of error for Gaia magnitude.	Feature
270	sy_icmag	I (Cousins) Magnitude	Brightness in the I (Cousins) filter.	Feature
271	sy_icmagerr1	I (Cousins) Magnitude Upper Unc	Upper margin of error for Ic-band magnitude.	Feature
272	sy_icmagerr2	I (Cousins) Magnitude Lower Unc	Lower margin of error for Ic-band magnitude.	Feature
273	sy_tmag	TESS Magnitude	Brightness as measured in the TESS mission filter.	Feature
274	sy_tmagerr1	TESS Magnitude Upper Unc	Upper margin of error for TESS magnitude.	Feature
275	sy_tmagerr2	TESS Magnitude Lower Unc	Lower margin of error for TESS magnitude.	Feature
276	sy_kepmag	Kepler Magnitude	Brightness as measured in the Kepler mission filter.	Feature
277	sy_kepmagerr1	Kepler Magnitude Upper Unc	Upper margin of error for Kepler magnitude.	Feature
278	sy_kepmagerr2	Kepler Magnitude Lower Unc	Lower margin of error for Kepler magnitude.	Feature

279	rowupdate	Date of Last Update	Date the record was last modified in the archive.	Metadata
280	pl_pubdate	Planetary Parameter Reference Publication Date	Date of the academic publication for these parameters.	Metadata
281	releasedate	Release Date	Date the data was made public in the archive.	Metadata
282	pl_nnotes	Number of Notes	Total number of scientific notes for this planet.	Feature
283	st_nphot	Number of Photometry Time Series	Number of photometry time series available.	Feature
284	st_nrvc	Number of Radial Velocity Time Series	Number of radial velocity time series available.	Feature
285	st_nspec	Number of Stellar Spectra Measurements	Total stellar spectra measurements recorded.	Feature
286	pl_nespec	Number of Eclipse Spectra	Number of secondary eclipse spectra available.	Feature
287	pl_ntranspec	Number of Transmission Spectra	Number of transmission spectra available.	Feature
288	pl_ndispec	Number of Direct Imaging Spectra	Number of direct imaging spectra available.	Feature
289	-		The final target variable you will calculate.	Target