# Uranus:

## Specific details:

Mass: 86,810,300,000,000,000,000,000,000kg

Density: 1.270g/cm3

Average Orbit Distance: 2,870,658,186km

Mean Orbit Velocity: 24,477km/h

Orbit Eccentricity: 0.04725744

Equatorial Inclination: 97.8 degrees (retrograde rotation)

Equatorial Radius: 25,362km

Equatorial Circumference: 159,354.1km

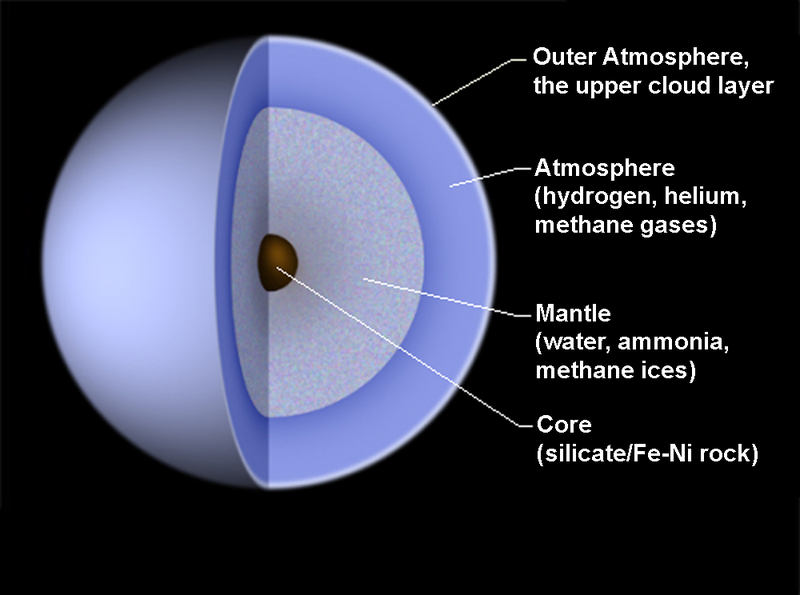
Surface Area: 8,083,079,690km2

Surface Gravity: 8.87m/s2

Escape Velocity: 76,968km/h

## Structure:

The hazy blue-green atmosphere probably extends to a depth of around 5,400 miles, where it rests above what is believed to be an icy or liquid mixture (an 'ocean') of water, ammonia, methane, and other volatiles, which in turn surrounds a rocky core perhaps a little smaller than Earth.



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| --- | --- | --- | --- | --- | --- | --- |
| **Rings of Uranus** | | | | | | |
|  | **Radius (km)** | **Radius/ Eq. radius** | **Optical Depth** | **Albedo (x 10-3)** | **Width  (km)** | **Eccentricity** |
| **Uranus equator** | 25,559 | 1.000 |  | | | |
| **6** | 41,837 | 1.637 | ~0.3 | ~15 | 1.5 | 0.0010 |
| **5** | 42,234 | 1.652 | ~0.5 | ~15 | ~2 | 0.0019 |
| **4** | 42,571 | 1.666 | ~0.3 | ~15 | ~2 | 0.0011 |
| **Alpha** | 44,718 | 1.750 | ~0.4 | ~15 | 4 - 10 | 0.0008 |
| **Beta** | 45,661 | 1.786 | ~0.3 | ~15 | 5 - 11 | 0.0004 |
| **Eta** | 47,176 | 1.834 | ~0.4- | ~15 | 1.6 |  |
| **Gamma** | 47,627 | 1.863 | ~0.3+ | ~15 | 1 - 4 | 0.0011 |
| **Delta** | 48,300 | 1.900 | ~0.5 | ~15 | 3 - 7 | 0.0004 |
| **Lambda** | 50,024 | 1.957 | ~0.1 | ~15 | ~2 | 0. |
| **Epsilon** | 51,149 | 2.006 | 0.5-2.3 | ~18 | 20 - 96 | 0.0079 |
|  |  | | | | | |
| **R/2003 U 2** | 67,300 | 2.633 | <<0.01 |  | 3,800 | 0. |
| **R/2003 U 1** | 97,700 | 3.823 | <<0.01 |  | 17,000 | 0. |
| * The scheme of [Uranus](https://en.wikipedia.org/wiki/Uranus)'s ring-moon system. Solid lines denote rings; dashed lines denote orbits of moons. |  |  |  |  |  |  |

* Total known rings:13

## Uranian moons:

* Known moons: 27

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| Name | Diameter(km) | Mass(\*1016) | Semi major axis (km) | Orbital Period(d) |  |  |  |
|  |  |  |  |  |  |  |  |
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| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| †[**Miranda**](https://en.wikipedia.org/wiki/Miranda_(moon)) | [/mɪˈrændə/](https://en.wikipedia.org/wiki/Help:IPA/English) | [PIA18185 Miranda's Icy Face.jpg](https://en.wikipedia.org/wiki/File:PIA18185_Miranda%27s_Icy_Face.jpg) | 471.6 ± 1.4  (481 × 468 × 466) | 6590±750 | 129390 | +1.41348 | 4.232° | 0.0013 | 1948 | [Kuiper](https://en.wikipedia.org/wiki/Gerard_P._Kuiper) |
| 15 | I | †[**Ariel**](https://en.wikipedia.org/wiki/Ariel_(moon)) | [/ˈɛəriɛl/](https://en.wikipedia.org/wiki/Help:IPA/English) | [Ariel (moon).jpg](https://en.wikipedia.org/wiki/File:Ariel_(moon).jpg) | 1157.8±1.2  (1162 × 1156 × 1155) | 135300±12000 | 191020 | +2.52038 | 0.260° | 0.0012 | 1851 | [Lassell](https://en.wikipedia.org/wiki/William_Lassell) |
| 16 | II | †[**Umbriel**](https://en.wikipedia.org/wiki/Umbriel_(moon)) | [/ˈʌmbriɛl/](https://en.wikipedia.org/wiki/Help:IPA/English) | [PIA00040 Umbrielx2.47.jpg](https://en.wikipedia.org/wiki/File:PIA00040_Umbrielx2.47.jpg) | 1169.4±5.6 | 117200±13500 | 266300 | +4.14418 | 0.205° | 0.0039 | 1851 | [Lassell](https://en.wikipedia.org/wiki/William_Lassell) |
| 17 | III | †**[Titania](https://en.wikipedia.org/wiki/Titania_(moon)" \o "Titania (moon))** | [/tɪˈtɑːniə/](https://en.wikipedia.org/wiki/Help:IPA/English) | [Titania (moon) color, edited.jpg](https://en.wikipedia.org/wiki/File:Titania_(moon)_color,_edited.jpg) | 1576.8±1.2 | 352700±9000 | 435910 | +8.70587 | 0.340° | 0.0011 | 1787 | [Herschel](https://en.wikipedia.org/wiki/William_Herschel) |
| 18 | IV | †[**Oberon**](https://en.wikipedia.org/wiki/Oberon_(moon)) | [/ˈoʊbərɒn/](https://en.wikipedia.org/wiki/Help:IPA/English) | [Voyager 2 picture of Oberon.jpg](https://en.wikipedia.org/wiki/File:Voyager_2_picture_of_Oberon.jpg) | 1522.8±5.2 | 301400±7500 | 583520 | +13.4632 | 0.058° | 0.0014 | 1787 | [Herschel](https://en.wikipedia.org/wiki/William_Herschel) |

## Atmosphere:

* Surface Pressure: >>1000 bars
* Temperature at 1 bar: 76 K (-197 C)
* Temperature at 0.1 bar: 53 K (-220 C)
* Density at 1 bar: 0.42 kg/m3
* Wind speeds: 0-250 m/s
* Scale height: 27.7 km
* Mean molecular weight: 2.64
* Atmospheric composition (by volume, uncertainty in parentheses)

Major: Molecular hydrogen (H2) - 82.5% (3.3%); Helium (He) - 15.2% (3.3%)

Methane (CH4) - 2.3%

Minor (ppm): Hydrogen Deuteride (HD) - 148

Aerosols: Ammonia ice, water ice, ammonia hydrosulfide, methane ice(?)

## Magnetic Field:

* Dipole field strength: 0.228 Gauss-Ru3
* Dipole tilt to rotational axis: 58.6 degrees
* Longitude of tilt: 53.6 degrees
* Dipole offset: 0.352 Ru
* Surface (1 Ru) field strength: ~0.1 - 1.0 Gauss

(Ru denotes Uranian model radius, here defined to be 25,600 km)

## Reflective Properties:

* Bond albedo: 0.003
* Geometric albedo: 0.488
* V-band magnitude: -7.11
* Solar irradiance(W/m2: 3,69
* Black-body temperature(K): 59.1