

# Venus RDF and SPARQL Queries

## RDF Data for Venus

The RDF data for Venus is represented using the Turtle format:

```
@prefix : <http://example.org/solarsystem#> .
@prefix rdf: <http://www.w3.org/1999/02/22-rdf-syntax-ns#> .
@prefix rdfs: <http://www.w3.org/2000/01/rdf-schema#> .

:Venus rdf:type :Planet ;
    rdfs:label "Venus" ;
    :colorPlanet [ rdf:_1 "Brown" ; rdf:_2 "Grey" ] ;
    :atmosphericComposition [ rdf:_1 "Carbon Dioxide (96.5%)" ] ;
    :mass 4.87 ;
    :diameter 12104 ;
    :density 5243 ;
    :surfaceGravity 8.9 ;
    :escapeVelocity 10.4 ;
    :rotationPeriod -5832.5 ;
    :lengthOfDay 2802.0 ;
    :distanceFromSun 108.2 ;
    :meanTemperature 464 ;
    :numberOfMoons 0 ;
    :ringSystem "No" ;
    :globalMagneticField "No" ;
    rdfs:label "Venus" ;
    :perihelion "107.5"^^xsd:decimal ;
    :aphelion "108.9"^^xsd:decimal ;
    :orbitalPeriod "224.7"^^xsd:decimal ;
    :orbitalVelocity "35"^^xsd:decimal ;
    :orbitalEccentricity "0.007"^^xsd:decimal ;
    :obliquityToOrbit "177.4"^^xsd:decimal ;
    :surfacePressure "92"^^xsd:decimal ;
    :surfaceTemperature "464" ;
    :atmosphericPressure "92"^^xsd:decimal ;
    :surfaceFeatures [
        rdf:type rdf:Bag ;
        rdf:_1 "Volcanoes" ;
        rdf:_2 "Lava Plains" ;
        rdf:_3 "Craters"
```

```

] ;
:composition [
    rdf:type rdf:Bag ;
    rdf:_1 "Basaltic Rock" ;
    rdf:_2 "Carbon Dioxide"
] .

```

## Questions and SPARQL Queries

### 1. Orbital and Rotation Details of Venus

#### SPARQL Query:

```

PREFIX solar: <http://example.org/solarsystem#>
PREFIX rdfs: <http://www.w3.org/2000/01/rdf-schema#>

```

```

SELECT ?planetName ?orbitalPeriod ?orbitalVelocity ?orbitalEccentricity ?
WHERE {
    solar:Venus rdfs:label ?planetName ;
                solar:orbitalPeriod ?orbitalPeriod ;
                solar:orbitalVelocity ?orbitalVelocity ;
                solar:orbitalEccentricity ?orbitalEccentricity ;
                solar:rotationPeriod ?rotationPeriod ;
                solar:lengthOfDay ?lengthOfDay .
}

```

### 2. Temperature and Pressure of Venus

#### SPARQL Query:

```

PREFIX solar: <http://example.org/solarsystem#>
PREFIX rdfs: <http://www.w3.org/2000/01/rdf-schema#>

```

```

SELECT ?planetName ?surfaceTemp ?surfacePressure ?atmosphericPressure ?me
WHERE {
    solar:Venus rdfs:label ?planetName ;
                solar:surfaceTemperature ?surfaceTemp ;
                solar:surfacePressure ?surfacePressure ;
                solar:atmosphericPressure ?atmosphericPressure ;
                solar:meanTemperature ?meanTemp .
}

```

### 3. What are the SurfaceFeatures of Venus

#### SPARQL Query:

```
PREFIX solar: <http://example.org/solarsystem#>
PREFIX rdf: <http://www.w3.org/1999/02/22-rdf-syntax-ns#>
PREFIX rdfs: <http://www.w3.org/2000/01/rdf-schema#>
```

```
SELECT ?planetName ?feature
WHERE {
    solar:Venus rdfs:label ?planetName ;
                solar:surfaceFeatures ?features .
    ?features ?position ?feature .
    FILTER(STRSTARTS(STR(?position), STR(rdf:_)))
}
ORDER BY ?position
```