MUSICAL SCALES with

Saturn as the FUNDAMENTAL

ALL WITHIN .5 PERCENT UNLES MARKED

1. Self ODR – farthest distance from sun over closest

1.114501526352926797 9

2. SOLAR DAY

PLUTO → 1.79821861047751960 18

3. Mass

Uranus PLANET → **1.39891048023341943 13,**

Jupiter PLANET → **1.66995214254697594 28,**

4. YEAR LENGTH

Venus PLANET → **1.4958361688737040 21`7.6989700043360205,**

Neptune PLANET → **1.3990264979388062093`7.698970004336017**

5. Angular Mom

Jupiter PLANET → **1.11946619417634601 35,**

Eris → 1.20309650358383987 02

6. Radius

Venus PLANET → 1.2041871839783203789`3.3688824936447217,

Jupiter PLANET → 1.1997598627787312188`3.749059943314535,

SOLAR DAY by Saturn

PLUTO → 1.798218610477519601 8`4.9926358193285445

In[34]:=
```
2^FractionalPart[Log[2, EntityValue["Planet", "SolarDay", "EntityAssociation"] /
    Entity["Planet", "Saturn"]["SolarDay"]]]
```

Out[34]= ⟨| Mercury → 1.5478, Venus → 1.0271, Earth → 1.1261, Mars → 1.1570, Jupiter → 0.9314, Saturn → 1.0000, Uranus → 1.6177, Neptune → 1.5117 |⟩

In[35]:=
```
2^FractionalPart[Log[2, Entity["Planet", "Saturn"]["SolarDay"] /
    EntityValue["Planet", "SolarDay", "EntityAssociation"]]]
```

Out[35]= ⟨| Mercury → 0.64608, Venus → 0.9736, Earth → 0.88806, Mars → 0.86430, Jupiter → 1.0736, Saturn → 1.0000, Uranus → 0.6182, Neptune → 0.6615 |⟩

In[32]:=
```
2^FractionalPart[Log[2,
   Entity["MinorPlanet", "Pluto"]["SolarDay"] / Entity["Planet", "Saturn"]["SolarDay"]]]
```

Out[32]= 1.7982

In[33]:=
```
2^FractionalPart[Log[2,
   Entity["MinorPlanet", "Eris"]["SolarDay"] / Entity["Planet", "Saturn"]["SolarDay"]]]
```

Out[33]= 1.22

MASS by Saturn

Uranus PLANET → 1.3989104802334194313,

Jupiter → 1.6699521425469759428,

In[36]:=
```
2^FractionalPart[Log[2, Entity["Planet", "Saturn"]["Mass"] /
    EntityValue["Planet", "Mass", "EntityAssociation"]]]
```

Out[36]=
```
⟨| Mercury → 1.681, Venus → 1.824, Earth → 1.487, Mars → 1.730,
 Jupiter → 0.599, Saturn → 1.000, Uranus → 1.637, Neptune → 1.387 |⟩
```

In[37]:=
```
2^FractionalPart[Log[2, EntityValue["Planet", "Mass", "EntityAssociation"] /
    Entity["Planet", "Saturn"]["Mass"]]]
```

Out[37]=
```
⟨| Mercury → 0.595, Venus → 0.548, Earth → 0.673, Mars → 0.578,
 Jupiter → 1.670, Saturn → 1.000, Uranus → 0.611, Neptune → 0.721 |⟩
```

In[38]:=
```
2^FractionalPart[
  Log[2, Entity["Planet", "Saturn"]["Mass"] / Entity["MinorPlanet", "Pluto"]["Mass"]]]
```

Out[38]=
```
1.325
```

In[39]:=
```
2^FractionalPart[
  Log[2, Entity["Planet", "Saturn"]["Mass"] / Entity["MinorPlanet", "Eris"]["Mass"]]]
```

Out[39]=
```
1.04
```

In[ ]:=
```
----------------------------------------------
```

BODIES IN HARMONY with Saturn

YEAR LENGTH

Venus → 1.4958362,

Neptune → 1.3990265

In[40]:=
```
2^FractionalPart[Log[2, EntityValue["Planet", "OrbitPeriod", "EntityAssociation"] /
    Entity["Planet", "Saturn"]["OrbitPeriod"]]]
```

Out[40]=
```
⟨| Mercury → 0.5234465, Venus → 0.6685224, Earth → 0.5433493, Mars → 0.5109698,
 Jupiter → 0.8056790, Saturn → 1.0000000, Uranus → 1.4265532, Neptune → 1.3990265 |⟩
```

In[41]:=
```
2^FractionalPart[Log[2, Entity["Planet", "Saturn"]["OrbitPeriod"] /
    EntityValue["Planet", "OrbitPeriod", "EntityAssociation"]]]
```

Out[41]=
```
⟨| Mercury → 1.910415, Venus → 1.4958362, Earth → 1.8404366, Mars → 1.9570630,
 Jupiter → 1.2411891, Saturn → 1.0000000, Uranus → 0.7009903, Neptune → 0.7147827 |⟩
```

In[42]:=
```
2^FractionalPart[Log[2, Entity["MinorPlanet", "Eris"]["OrbitPeriod"] /
    Entity["Planet", "Saturn"]["OrbitPeriod"]]]
```

Out[42]= 1.1820

In[43]:=
```
2^FractionalPart[Log[2, Entity["MinorPlanet", "Pluto"]["OrbitPeriod"] /
    Entity["Planet", "Saturn"]["OrbitPeriod"]]]
```

Out[43]= 1.0523842

In[ ]:= ----------

In[44]:=

Moment Of Inertia

```
2^FractionalPart[Log[2, EntityValue["Planet", "MomentOfInertia", "EntityAssociation"] /
    Entity["Planet", "Saturn"]["MomentOfInertia"]]]
```

Out[44]= Inertia Moment Of

Out[45]= ⟨| Mercury → 0.84, Venus → 0.60, Earth → 0.813, Mars → 0.87,
Jupiter → 1.46, Saturn → 1.00, Uranus → 0.99, Neptune → 0.71 |⟩

In[46]:=
```
2^FractionalPart[Log[2, Entity["Planet", "Saturn"]["MomentOfInertia"] /
    EntityValue["Planet", "MomentOfInertia", "EntityAssociation"]]]
```

Out[46]= ⟨| Mercury → 1.2, Venus → 1.7, Earth → 1.23, Mars → 1.14,
Jupiter → 0.69, Saturn → 1.00, Uranus → 1.01, Neptune → 1.4 |⟩

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MAKE ANG MOMENTUM LIST

```
angV = 2 / 5 * Entity["Planet", "Venus"]["Mass"] *
  Entity["Planet", "Venus"]["Radius"]^2 * Entity["Planet", "Venus"]["SolarDay"] * 2 * π
```

Out[ ]= _ ___^{12}

Out[ ]= 2.02×10^{34} kg mi^{2}days

```
In[]:= angM = 2 / 5 * Entity["Planet", "Mercury"]["Mass"] *
          Entity["Planet", "Mercury"]["Radius"]^2 * Entity["Planet", "Mercury"]["SolarDay"] * 2 * π
```

Out[]= $3.35 \times 10^{32}\ \mathrm{kg\,mi^2 days}$

```
In[]:= angE = 2 / 5 * Entity["Planet", "Earth"]["Mass"] *
          Entity["Planet", "Earth"]["Radius"]^2 * Entity["Planet", "Earth"]["SolarDay"] * 2 * π
```

Out[]= $5.65 \times 10^{33}\ \mathrm{kg\,mi^2 h}$

```
In[]:= angMa = 2 / 5 * Entity["Planet", "Mars"]["Mass"] *
          Entity["Planet", "Mars"]["Radius"]^2 * Entity["Planet", "Mars"]["SolarDay"] * 2 * π
```

Out[]= $1.764 \times 10^{32}\ \mathrm{kg\,mi^2 h}$

```
In[]:= angC = 2 / 5 * Entity["MinorPlanet", "Ceres"]["Mass"] *
          Entity["MinorPlanet", "Ceres"]["Radius"]^2 *
          Entity["MinorPlanet", "Ceres"]["SolarDay"] * 2 * π
```

Out[]= $1.84 \times 10^{27}\ \mathrm{kg\,mi^2 h}$

```
In[]:= angJ = 2 / 5 * Entity["Planet", "Jupiter"]["Mass"] *
          Entity["Planet", "Jupiter"]["Radius"]^2 * Entity["Planet", "Jupiter"]["SolarDay"] * 2 * π
```

Out[]= $8.94 \times 10^{37}\ \mathrm{kg\,mi^2 h}$

```
In[]:= angS = 2 / 5 * Entity["Planet", "Saturn"]["Mass"] *
          Entity["Planet", "Saturn"]["Radius"]^2 * Entity["Planet", "Saturn"]["SolarDay"] * 2 * π
```

Out[]= $1.998 \times 10^{37}\ \mathrm{kg\,mi^2 h}$

```
In[]:= angU = 2 / 5 * Entity["Planet", "Uranus"]["Mass"] *
          Entity["Planet", "Uranus"]["Radius"]^2 * Entity["Planet", "Uranus"]["SolarDay"] * 2 * π
```

Out[]= $9.34 \times 10^{35}\ \mathrm{kg\,mi^2 h}$

```
In[]:= angN = 2 / 5 * Entity["Planet", "Neptune"]["Mass"] *
          Entity["Planet", "Neptune"]["Radius"]^2 * Entity["Planet", "Neptune"]["SolarDay"] * 2 * π
```

Out[]= $9.7 \times 10^{35}\ \mathrm{kg\,mi^2 h}$

```
In[]:= angP = 2 / 5 * Entity["MinorPlanet", "Pluto"]["Mass"] *
          Entity["MinorPlanet", "Pluto"]["Radius"]^2 *
          Entity["MinorPlanet", "Pluto"]["SolarDay"] * 2 * π
```

Out[]= $1.149 \times 10^{29}\ \mathrm{kg\,mi^2 days}$

```
In[]:= angE = 2 / 5 * Entity["MinorPlanet", "Eris"]["Mass"] *
          Entity["MinorPlanet", "Eris"]["Radius"]^2 *
          Entity["MinorPlanet", "Eris"]["SolarDay"] * 2 * π
```

Out[]= $5.7 \times 10^{29}\ \mathrm{kg\,mi^2 h}$

In[]:=
```
angMom = List[angM, angV, angE, angMa, angC, angJ, angS, angU, angN, angP, angE]
```

Out[]=
$$\left\{3.35\times10^{32}\ \text{kg mi}^2\text{days},\ 2.02\times10^{34}\ \text{kg mi}^2\text{days},\ 5.7\times10^{29}\ \text{kg mi}^2\text{h},\ 1.764\times10^{32}\ \text{kg mi}^2\text{h},\ 1.84\times10^{27}\ \text{kg mi}^2\text{h},\ 8.94\times10^{37}\ \text{kg mi}^2\text{h},\ 1.998\times10^{37}\ \text{kg mi}^2\text{h},\ 9.34\times10^{35}\ \text{kg mi}^2\text{h},\ 9.7\times10^{35}\ \text{kg mi}^2\text{h},\ 1.149\times10^{29}\ \text{kg mi}^2\text{days},\ 5.7\times10^{29}\ \text{kg mi}^2\text{h}\right\}$$

Saturn Ang Mom

Saturn Ang Mom

Jupiter 1.119, Merc 1.21, Earth n Eris 1.05, Ceres 1.26, Uranus 1.34

In[]:=
```
2^FractionalPart[Log[2, angS / angMom]]
```

Out[]=
```
{1.21, 1.29, 1.05, 1.728, 1.26, 0.893, 1.000, 1.34, 1.29, 1.727, 1.05}
```

In[]:=
```
2^FractionalPart[Log[2, angMom / angS]]
```

Out[]=
```
{0.83, 0.776, 0.95, 0.579, 0.79, 1.119, 1.000, 0.748, 0.78, 0.579, 0.95}
```

Radius by Saturn

within .5 precent

Venus → **1.2041871839783203789`3.3688824936447217,**

Jupiter → **1.1997598627787312188`3.749059943314535,**

In[48]:=
```
2^FractionalPart[Log[2, Entity["Planet", "Saturn"]["Radius"] /
    EntityValue["Planet", "Radius", "EntityAssociation"]]]
```

Out[48]=
```
⟨| Mercury → 1.49, Venus → 1.204, Earth → 1.144, Mars → 1.075,
 Jupiter → 0.834, Saturn → 1.000, Uranus → 1.149, Neptune → 1.18 |⟩
```

In[47]:=
```
2^FractionalPart[Log[2, EntityValue["Planet", "Radius", "EntityAssociation"] /
    Entity["Planet", "Saturn"]["Radius"]]]
```

Out[47]=
```
⟨| Mercury → 0.670, Venus → 0.830, Earth → 0.8742, Mars → 0.930,
 Jupiter → 1.200, Saturn → 1.000, Uranus → 0.870, Neptune → 0.845 |⟩
```

In[50]:=
```
2^FractionalPart[
  Log[2, Entity["Planet", "Saturn"]["Radius"] / Entity["MinorPlanet", "Eris"]["Radius"]]]
```

Out[50]= 1.567

In[49]:=
```
2^FractionalPart[
  Log[2, Entity["Planet", "Saturn"]["Radius"] / Entity["MinorPlanet", "Pluto"]["Radius"]]]
```

Out[49]= 1.531

---

change in orbital distance by Saturn

```
Entity["Planet", "Saturn"]["Radius"]
```

In[51]:=
```
Entity["Planet", "Saturn"]["Aphelion"] / Entity["Planet", "Saturn"]["Perihelion"]
```

Out[51]= 1.114502