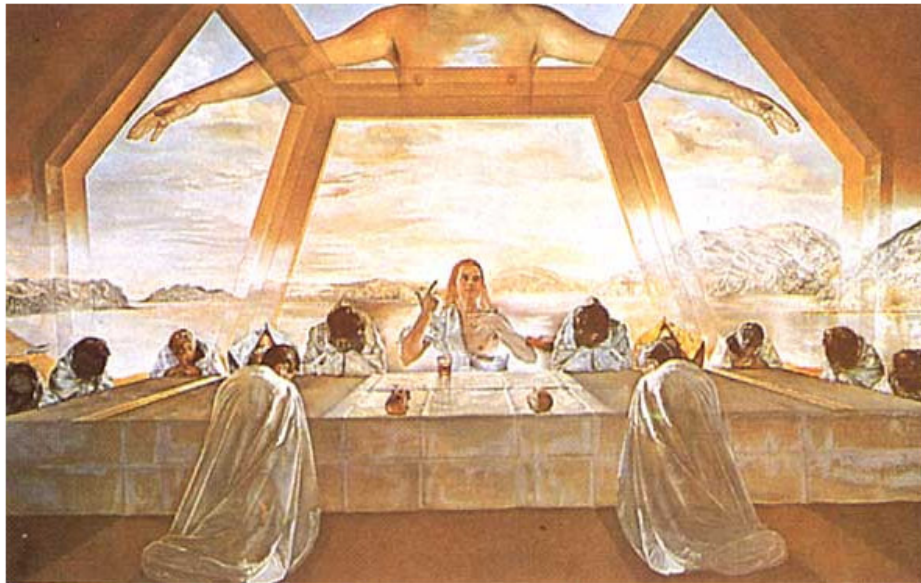


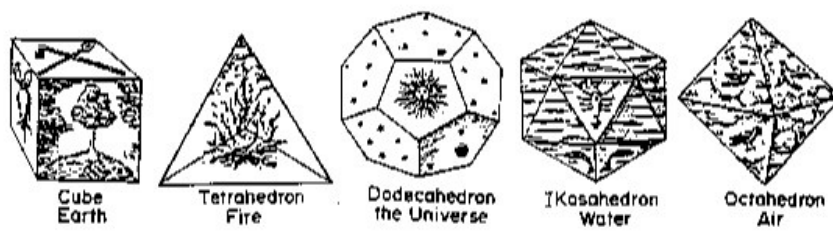
	Basic Element	vertices	Edges	faces
Tetrahedron	Fire	4	6	4
Octahedron	Wind	6	12	8
Icosahedron	Water	12	30	20
Hexahedron	Earth	8	12	6
Dodecahedron	Heavens	20	30	12

"that which God used for embroidering the constellations on the whole heaven."

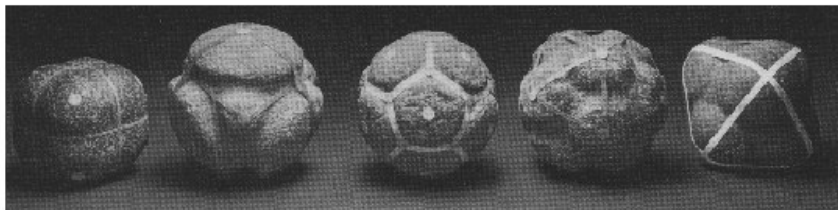
Salvador Dali - 1955  
Sacrament of the Last Supper  
\*National Gallery, Wash. D.C.



The solids as drawn in Kepler's *Mysterium Cosmographicum*






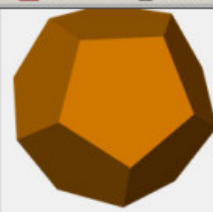

and represented in stone from a neolithic settlement



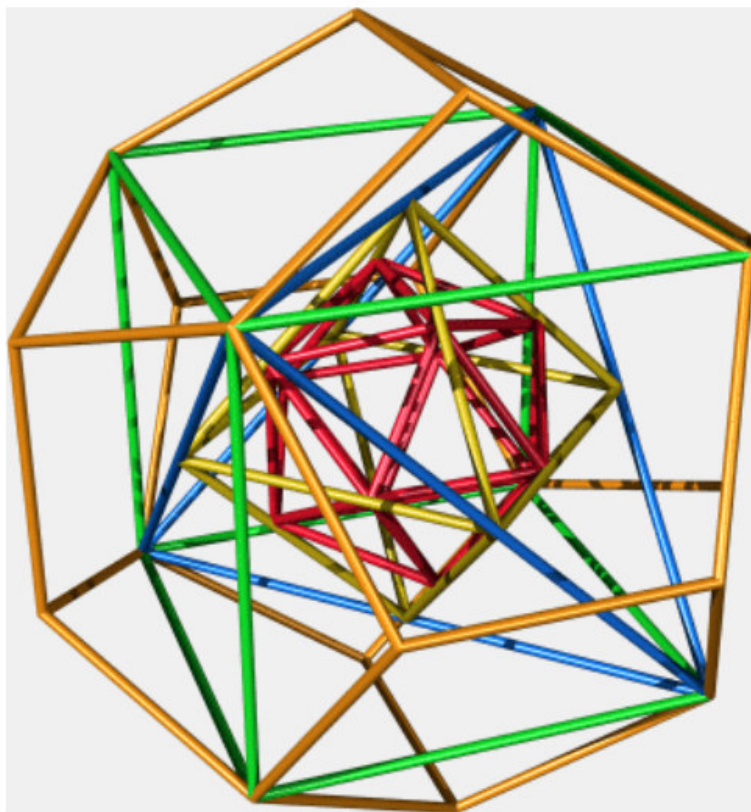
The Platonic Solids - Microsoft Internet Explorer

Address: [http://davidf.faricy.net/polyhedra/Platonic\\_Solids.html](http://davidf.faricy.net/polyhedra/Platonic_Solids.html)

Google: platonic solids inscribed

					
<b>Name/Symbol</b>	Tetrahedron 4(3)	Hexahedron (cube) 6(4)	Octahedron 8(3)	Dodecahedron 12(5)	Icosahedron 20(3)
<b>Faces</b>	4	6	8	12	20
<b>Edges</b>	6	12	12	30	30
<b>Vertices</b>	4	8	6	20	12
<b>Configuration</b>	(3, 3, 3) 3 2 3 3 <sup>3</sup>	(4, 4, 4) 3 2 4 4 <sup>3</sup>	(3, 3, 3, 3) 4 2 3 3 <sup>4</sup>	(5, 5, 5) 3 2 5 5 <sup>3</sup>	(3, 3, 3, 3, 3) 5 2 3
<b>Symmetry</b>	Tetrahedral T <sub>d</sub>	Octahedral O <sub>h</sub>	Octahedral O <sub>h</sub>	Icosahedral I <sub>h</sub>	Icosahedral I <sub>h</sub>
<b>Dual</b>	Tetrahedron	Octahedron	Hexahedron (cube)	Icosahedron	Dodecahedron
<b>Volume</b> (edge = 1 unit)	$\frac{\sqrt{2}}{12}$	1	$\frac{\sqrt{2}}{3}$	$\frac{7\sqrt{5}+15}{4}$	$\frac{5(\sqrt{5}+3)}{12}$
<b>Surface Area</b>	$\sqrt{3}$	6	$2\sqrt{3}$	$3\sqrt{5(5+2\sqrt{5})}$	$5\sqrt{3}$
<b>Circumradius</b> (center-vertex)	$\frac{\sqrt{6}}{4}$	$\frac{\sqrt{3}}{2}$	$\frac{\sqrt{2}}{2}$	$\frac{(\sqrt{5}+1)\sqrt{3}}{4}$	$\frac{\sqrt{2}(\sqrt{5}+3)}{4}$
<b>Midradius</b> (center-edge)	$\frac{\sqrt{2}}{4}$	$\frac{\sqrt{2}}{2}$	$\frac{1}{2}$	$\frac{\sqrt{5}+3}{4}$	$\frac{\sqrt{5}+1}{4}$
<b>Inradius</b> (center-face)	$\frac{\sqrt{6}}{12}$	$\frac{1}{2}$	$\frac{\sqrt{6}}{6}$	$\frac{\sqrt{10(11-\sqrt{5}+25)}}{4}$	$\frac{(\sqrt{5}+3)\sqrt{3}}{4}$

<http://www.blazelabs.com/f-p-solids.asp>



## Properties of Platonic Solids

- \* only existing solids in which all faces are identical & equilateral

- \* each solid can be circumscribed by a sphere with all of its vertices lying on the sphere equidistant from each other.

Other observations by Plato:

\* faces of all of the solids can be constructed out of 2 types of right triangles:

$45^\circ - 45^\circ - 90^\circ$

$30^\circ - 60^\circ - 90^\circ$

