



# UNIT 2 : THE BIG BANG VOCABULARY

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MAIN IDEA (OBJECTIVE):



**UNIT 2** HAS AN ARRAY OF COMPLEX VOCABULARY THAT PERTAINS TO THE VERY CREATION OF TIME AND SPACE!

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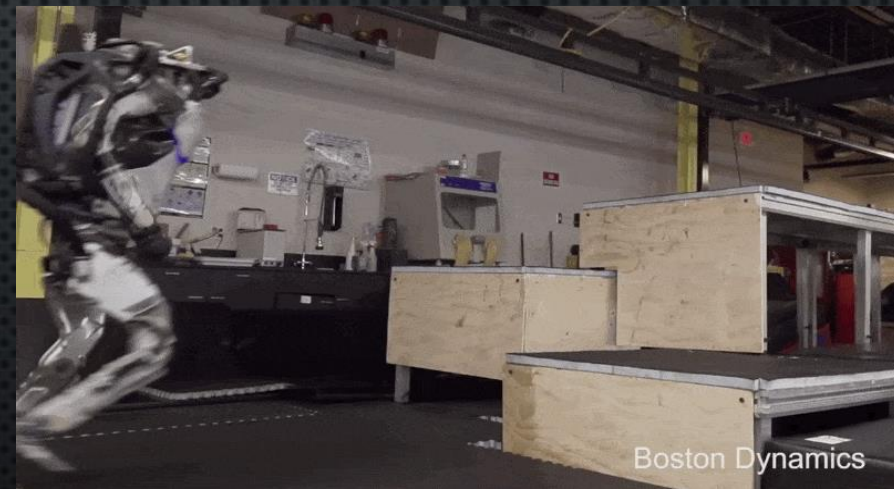
LECTURE FOCUS (ESSENTIAL QUESTION):



WHY IS IT IMPORTANT TO HAVE AN UNDERSTANDING OF ADVANCED LANGUAGE WHEN STUDYING A NEW SUBJECT?  
WHAT LANGUAGE DO YOU KNOW THAT MIGHT HELP YOU UNDERSTAND THE BIG BANG?

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**ADVANCE** - A MOVEMENT FORWARD / A CHANGE FOR THE BETTER; PROGRESS IN DEVELOPMENT / BRING FORWARD FOR CONSIDERATION OR ACCEPTANCE



**RELATED WORDS ( SYNONYMS )** - ACCELERATE, ADVANCEMENT, PROGRESSION, PROMOTE, RAISE, RISE AND SUPERCHARGE.

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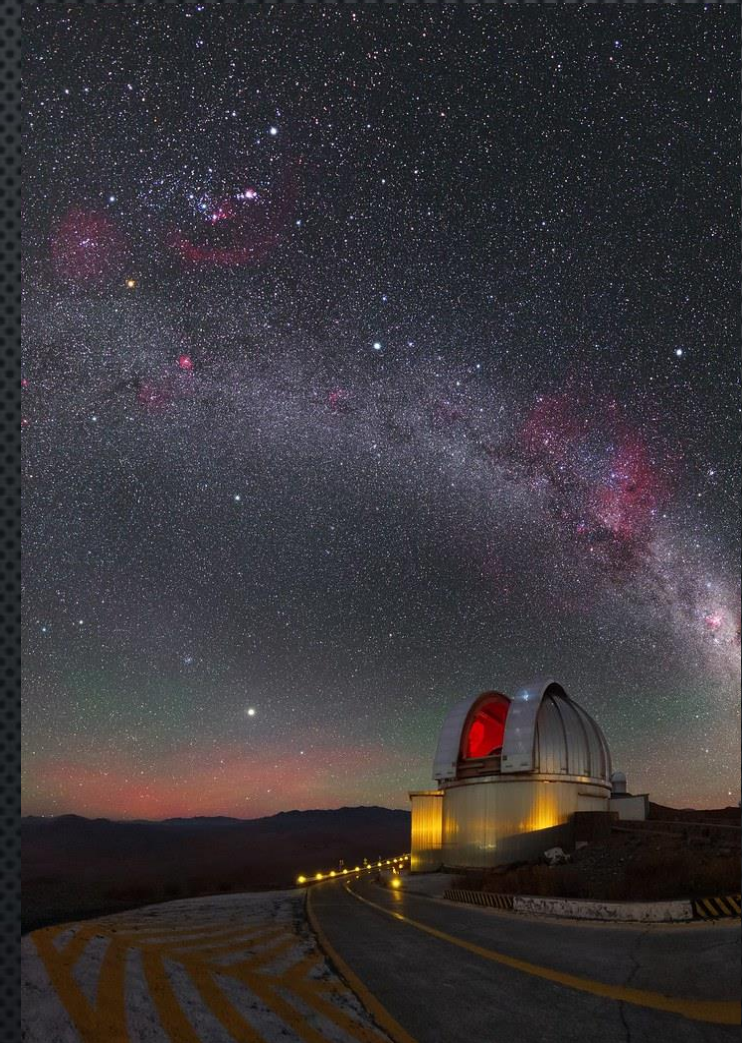
**ASTRONOMICAL** - RELATING OR BELONGING TO THE SCIENCE OF ASTRONOMY / INCONCEIVABLY LARGE



**RELATED WORDS ( SYNONYMS )** – GALACTIC , OCEANIC, VAST AND ENORMOUS

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**ASTRONOMY** - THE BRANCH OF PHYSICS THAT STUDIES CELESTIAL BODIES AND THE UNIVERSE AS A WHOLE



**RELATED WORDS ( SYNONYMS )** – STARGAZING AND ASTROPHYSICS

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**DISCOVERY** - THE ACT OF DISCOVERING SOMETHING / SOMETHING THAT IS DISCOVERED / A PRODUCTIVE INSIGHT



**RELATED WORDS ( SYNONYMS )** – BREAKTHROUGH , INSIGHT AND UNCOVER

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**EVIDENCE** - YOUR BASIS FOR BELIEF OR DISBELIEF; KNOWLEDGE ON WHICH TO BASE YOUR BELIEF / AN INDICATION THAT MAKES SOMETHING EVIDENT

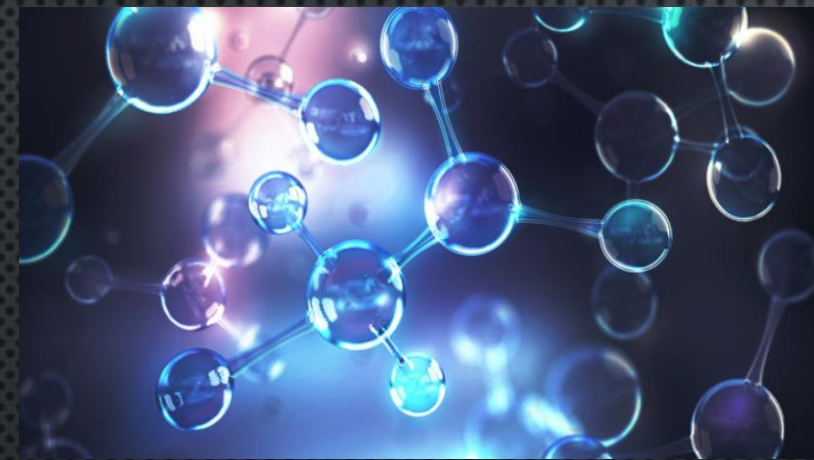


**RELATED WORDS ( SYNONYMS )** – ATTEST, CERTIFY, DEMONSTRATE, GROUNDS, MANIFEST, PROVE



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**HYDROGEN** - A NONMETALLIC ELEMENT THAT IS NORMALLY A COLORLESS AND ODORLESS HIGHLY FLAMMABLE GAS / ABUNDANT ELEMENT IN THE UNIVERSE



## Periodic Table of the Elements

1 <b>H</b> Hydrogen 1.008 1s <sup>1</sup>																	2 <b>He</b> Helium 4.003 1s <sup>2</sup>
3 <b>Li</b> Lithium 6.941 [He]2s <sup>1</sup>	4 <b>Be</b> Beryllium 9.012 [He]2s <sup>2</sup>											5 <b>B</b> Boron 10.811 [He]2s <sup>2</sup> 2p <sup>1</sup>	6 <b>C</b> Carbon 12.011 [He]2s <sup>2</sup> 2p <sup>2</sup>	7 <b>N</b> Nitrogen 14.007 [He]2s <sup>2</sup> 2p <sup>3</sup>	8 <b>O</b> Oxygen 15.999 [He]2s <sup>2</sup> 2p <sup>4</sup>	9 <b>F</b> Fluorine 18.998 [He]2s <sup>2</sup> 2p <sup>5</sup>	10 <b>Ne</b> Neon 20.180 [He]2s <sup>2</sup> 2p <sup>6</sup>
11 <b>Na</b> Sodium 22.990 [Ne]3s <sup>1</sup>	12 <b>Mg</b> Magnesium 24.305 [Ne]3s <sup>2</sup>											13 <b>Al</b> Aluminum 26.982 [Ne]3s <sup>2</sup> 3p <sup>1</sup>	14 <b>Si</b> Silicon 28.086 [Ne]3s <sup>2</sup> 3p <sup>2</sup>	15 <b>P</b> Phosphorus 30.974 [Ne]3s <sup>2</sup> 3p <sup>3</sup>	16 <b>S</b> Sulfur 32.066 [Ne]3s <sup>2</sup> 3p <sup>4</sup>	17 <b>Cl</b> Chlorine 35.453 [Ne]3s <sup>2</sup> 3p <sup>5</sup>	18 <b>Ar</b> Argon 39.948 [Ne]3s <sup>2</sup> 3p <sup>6</sup>
19 <b>K</b> Potassium 39.098 [Ar]4s <sup>1</sup>	20 <b>Ca</b> Calcium 40.078 [Ar]4s <sup>2</sup>	21 <b>Sc</b> Scandium 44.956 [Ar]3d <sup>1</sup> 4s <sup>2</sup>	22 <b>Ti</b> Titanium 47.867 [Ar]3d <sup>2</sup> 4s <sup>2</sup>	23 <b>V</b> Vanadium 50.942 [Ar]3d <sup>3</sup> 4s <sup>2</sup>	24 <b>Cr</b> Chromium 51.996 [Ar]3d <sup>5</sup> 4s <sup>1</sup>	25 <b>Mn</b> Manganese 54.938 [Ar]3d <sup>5</sup> 4s <sup>2</sup>	26 <b>Fe</b> Iron 55.845 [Ar]3d <sup>6</sup> 4s <sup>2</sup>	27 <b>Co</b> Cobalt 58.933 [Ar]3d <sup>7</sup> 4s <sup>2</sup>	28 <b>Ni</b> Nickel 58.693 [Ar]3d <sup>8</sup> 4s <sup>2</sup>	29 <b>Cu</b> Copper 63.546 [Ar]3d <sup>10</sup> 4s <sup>1</sup>	30 <b>Zn</b> Zinc 65.38 [Ar]3d <sup>10</sup> 4s <sup>2</sup>	31 <b>Ga</b> Gallium 69.723 [Ar]3d <sup>10</sup> 4s <sup>2</sup> 4p <sup>1</sup>	32 <b>Ge</b> Germanium 72.631 [Ar]3d <sup>10</sup> 4s <sup>2</sup> 4p <sup>2</sup>	33 <b>As</b> Arsenic 74.922 [Ar]3d <sup>10</sup> 4s <sup>2</sup> 4p <sup>3</sup>	34 <b>Se</b> Selenium 78.971 [Ar]3d <sup>10</sup> 4s <sup>2</sup> 4p <sup>4</sup>	35 <b>Br</b> Bromine 79.904 [Ar]3d <sup>10</sup> 4s <sup>2</sup> 4p <sup>5</sup>	36 <b>Kr</b> Krypton 84.798 [Ar]3d <sup>10</sup> 4s <sup>2</sup> 4p <sup>6</sup>
37 <b>Rb</b> Rubidium 84.468 [Kr]5s <sup>1</sup>	38 <b>Sr</b> Strontium 87.62 [Kr]5s <sup>2</sup>	39 <b>Y</b> Yttrium 88.906 [Kr]4d <sup>1</sup> 5s <sup>2</sup>	40 <b>Zr</b> Zirconium 91.224 [Kr]4d <sup>2</sup> 5s <sup>2</sup>	41 <b>Nb</b> Niobium 92.906 [Kr]4d <sup>4</sup> 5s <sup>1</sup>	42 <b>Mo</b> Molybdenum 95.95 [Kr]4d <sup>5</sup> 5s <sup>1</sup>	43 <b>Tc</b> Technetium 98.907 [Kr]4d <sup>5</sup> 5s <sup>2</sup>	44 <b>Ru</b> Ruthenium 101.07 [Kr]4d <sup>7</sup> 5s <sup>1</sup>	45 <b>Rh</b> Rhodium 102.906 [Kr]4d <sup>8</sup> 5s <sup>1</sup>	46 <b>Pd</b> Palladium 106.42 [Kr]4d <sup>10</sup>	47 <b>Ag</b> Silver 107.868 [Kr]4d <sup>10</sup> 5s <sup>1</sup>	48 <b>Cd</b> Cadmium 112.414 [Kr]4d <sup>10</sup> 5s <sup>2</sup>	49 <b>In</b> Indium 114.818 [Kr]4d <sup>10</sup> 5s <sup>2</sup> 5p <sup>1</sup>	50 <b>Sn</b> Tin 118.711 [Kr]4d <sup>10</sup> 5s <sup>2</sup> 5p <sup>2</sup>	51 <b>Sb</b> Antimony 121.760 [Kr]4d <sup>10</sup> 5s <sup>2</sup> 5p <sup>3</sup>	52 <b>Te</b> Tellurium 127.6 [Kr]4d <sup>10</sup> 5s <sup>2</sup> 5p <sup>4</sup>	53 <b>I</b> Iodine 126.904 [Kr]4d <sup>10</sup> 5s <sup>2</sup> 5p <sup>5</sup>	54 <b>Xe</b> Xenon 131.294 [Kr]4d <sup>10</sup> 5s <sup>2</sup> 5p <sup>6</sup>
55 <b>Cs</b> Cesium 132.905 [Xe]6s <sup>1</sup>	56 <b>Ba</b> Barium 137.328 [Xe]6s <sup>2</sup>	57-71	72 <b>Hf</b> Hafnium 178.49 [Xe]4f <sup>14</sup> 5d <sup>2</sup> 6s <sup>2</sup>	73 <b>Ta</b> Tantalum 180.948 [Xe]4f <sup>14</sup> 5d <sup>3</sup> 6s <sup>2</sup>	74 <b>W</b> Tungsten 183.84 [Xe]4f <sup>14</sup> 5d <sup>4</sup> 6s <sup>2</sup>	75 <b>Re</b> Rhenium 186.207 [Xe]4f <sup>14</sup> 5d <sup>5</sup> 6s <sup>2</sup>	76 <b>Os</b> Osmium 190.23 [Xe]4f <sup>14</sup> 5d <sup>6</sup> 6s <sup>2</sup>	77 <b>Ir</b> Iridium 192.227 [Xe]4f <sup>14</sup> 5d <sup>7</sup> 6s <sup>2</sup>	78 <b>Pt</b> Platinum 195.085 [Xe]4f <sup>14</sup> 5d <sup>9</sup> 6s <sup>1</sup>	79 <b>Au</b> Gold 196.967 [Xe]4f <sup>14</sup> 5d <sup>10</sup> 6s <sup>1</sup>	80 <b>Hg</b> Mercury 200.592 [Xe]4f <sup>14</sup> 5d <sup>10</sup> 6s <sup>2</sup>	81 <b>Tl</b> Thallium 204.383 [Xe]4f <sup>14</sup> 5d <sup>10</sup> 6s <sup>2</sup> 6p <sup>1</sup>	82 <b>Pb</b> Lead 207.2 [Xe]4f <sup>14</sup> 5d <sup>10</sup> 6s <sup>2</sup> 6p <sup>2</sup>	83 <b>Bi</b> Bismuth 208.980 [Xe]4f <sup>14</sup> 5d <sup>10</sup> 6s <sup>2</sup> 6p <sup>3</sup>	84 <b>Po</b> Polonium [209] [208.982] [Xe]4f <sup>14</sup> 5d <sup>10</sup> 6s <sup>2</sup> 6p <sup>4</sup>	85 <b>At</b> Astatine 209 [208.982] [Xe]4f <sup>14</sup> 5d <sup>10</sup> 6s <sup>2</sup> 6p <sup>5</sup>	86 <b>Rn</b> Radon 222.018 [Xe]4f <sup>14</sup> 5d <sup>10</sup> 6s <sup>2</sup> 6p <sup>6</sup>
87 <b>Fr</b> Francium 223.020 [Rn]7s <sup>1</sup>	88 <b>Ra</b> Radium 226.025 [Rn]7s <sup>2</sup>	89-103	104 <b>Rf</b> Rutherfordium [261] [Rn]5f <sup>14</sup> 6d <sup>2</sup> 7s <sup>2</sup> *	105 <b>Db</b> Dubnium [262] [Rn]5f <sup>14</sup> 6d <sup>3</sup> 7s <sup>2</sup> *	106 <b>Sg</b> Seaborgium [263] [Rn]5f <sup>14</sup> 6d <sup>4</sup> 7s <sup>2</sup> *	107 <b>Bh</b> Bohrium [264] [Rn]5f <sup>14</sup> 6d <sup>5</sup> 7s <sup>2</sup> *	108 <b>Hs</b> Hassium [269] [Rn]5f <sup>14</sup> 6d <sup>6</sup> 7s <sup>2</sup> *	109 <b>Mt</b> Meitnerium [270] [Rn]5f <sup>14</sup> 6d <sup>7</sup> 7s <sup>2</sup> *	110 <b>Ds</b> Darmstadtium [271] [Rn]5f <sup>14</sup> 6d <sup>8</sup> 7s <sup>2</sup> *	111 <b>Rg</b> Roentgenium [272] [Rn]5f <sup>14</sup> 6d <sup>9</sup> 7s <sup>2</sup> *	112 <b>Cn</b> Copernicium [277] [Rn]5f <sup>14</sup> 6d <sup>10</sup> 7s <sup>2</sup> *	113 <b>Nh</b> Nihonium unknown [Rn]5f <sup>14</sup> 6d <sup>10</sup> 7s <sup>2</sup> 7p <sup>1</sup> *	114 <b>Fl</b> Flerovium unknown [Rn]5f <sup>14</sup> 6d <sup>10</sup> 7s <sup>2</sup> 7p <sup>2</sup> *	115 <b>Mc</b> Moscovium unknown [Rn]5f <sup>14</sup> 6d <sup>10</sup> 7s <sup>2</sup> 7p <sup>3</sup> *	116 <b>Lv</b> Livermorium [293] [Rn]5f <sup>14</sup> 6d <sup>10</sup> 7s <sup>2</sup> 7p <sup>4</sup> *	117 <b>Ts</b> Tennessine unknown [Rn]5f <sup>14</sup> 6d <sup>10</sup> 7s <sup>2</sup> 7p <sup>5</sup> *	118 <b>Og</b> Oganesson unknown [Rn]5f <sup>14</sup> 6d <sup>10</sup> 7s <sup>2</sup> 7p <sup>6</sup> *

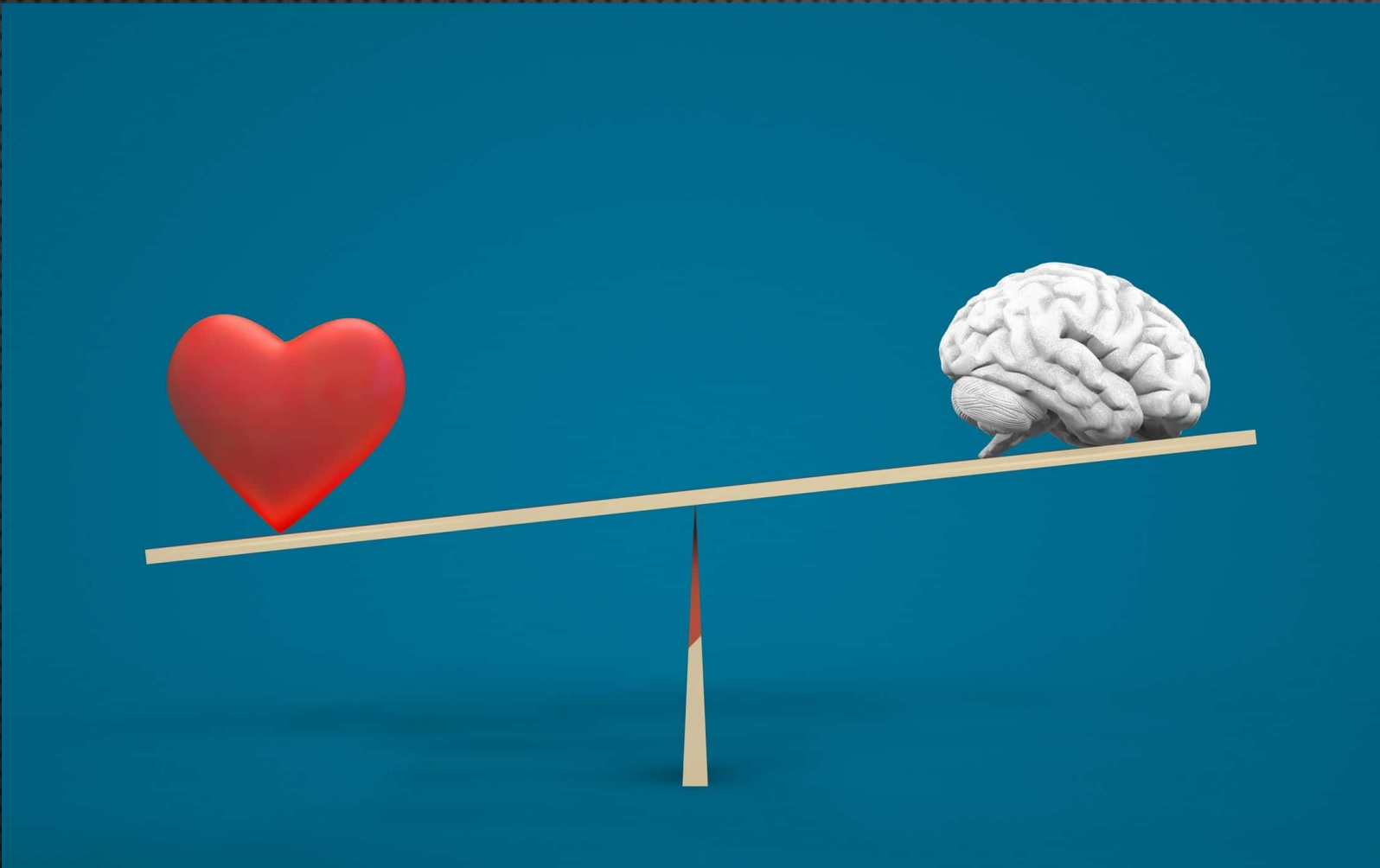
Configurations denoted with \* are unknown and the listed values are predicted.

57 <b>La</b> Lanthanum 138.905 [Xe]5d <sup>1</sup> 6s <sup>2</sup>	58 <b>Ce</b> Cerium 140.116 [Xe]4f <sup>1</sup> 5d <sup>1</sup> 6s <sup>2</sup>	59 <b>Pr</b> Praseodymium 140.908 [Xe]4f <sup>3</sup> 6s <sup>2</sup>	60 <b>Nd</b> Neodymium 144.242 [Xe]4f <sup>4</sup> 6s <sup>2</sup>	61 <b>Pm</b> Promethium 144.913 [Xe]4f <sup>5</sup> 6s <sup>2</sup>	62 <b>Sm</b> Samarium 150.36 [Xe]4f <sup>6</sup> 6s <sup>2</sup>	63 <b>Eu</b> Europium 151.964 [Xe]4f <sup>7</sup> 6s <sup>2</sup>	64 <b>Gd</b> Gadolinium 157.25 [Xe]4f <sup>7</sup> 5d <sup>1</sup> 6s <sup>2</sup>	65 <b>Tb</b> Terbium 158.925 [Xe]4f <sup>9</sup> 6s <sup>2</sup>	66 <b>Dy</b> Dysprosium 162.500 [Xe]4f <sup>10</sup> 6s <sup>2</sup>	67 <b>Ho</b> Holmium 164.930 [Xe]4f <sup>11</sup> 6s <sup>2</sup>	68 <b>Er</b> Erbium 167.259 [Xe]4f <sup>12</sup> 6s <sup>2</sup>	69 <b>Tm</b> Thulium 168.934 [Xe]4f <sup>13</sup> 6s <sup>2</sup>	70 <b>Yb</b> Ytterbium 173.055 [Xe]4f <sup>14</sup> 6s <sup>2</sup>	71 <b>Lu</b> Lutetium 174.967 [Xe]4f <sup>14</sup> 5d <sup>1</sup> 6s <sup>2</sup>
89 <b>Ac</b> Actinium 227.028 [Rn]6d <sup>1</sup> 7s <sup>2</sup>	90 <b>Th</b> Thorium 232.038 [Rn]6d <sup>2</sup> 7s <sup>2</sup>	91 <b>Pa</b> Protactinium 231.036 [Rn]5f <sup>2</sup> 6d <sup>1</sup> 7s <sup>2</sup>	92 <b>U</b> Uranium 238.029 [Rn]5f <sup>3</sup> 6d <sup>1</sup> 7s <sup>2</sup>	93 <b>Np</b> Neptunium 237.048 [Rn]5f <sup>4</sup> 6d <sup>1</sup> 7s <sup>2</sup>	94 <b>Pu</b> Plutonium 244.064 [Rn]5f <sup>6</sup> 7s <sup>2</sup>	95 <b>Am</b> Americium 243.061 [Rn]5f <sup>7</sup> 7s <sup>2</sup>	96 <b>Cm</b> Curium 247.070 [Rn]5f <sup>8</sup> 7s <sup>2</sup>	97 <b>Bk</b> Berkelium 247.070 [Rn]5f <sup>9</sup> 7s <sup>2</sup>	98 <b>Cf</b> Californium 251.080 [Rn]5f <sup>10</sup> 7s <sup>2</sup>	99 <b>Es</b> Einsteinium 252.101 [Rn]5f <sup>11</sup> 7s <sup>2</sup>	100 <b>Fm</b> Fermium 257.105 [Rn]5f <sup>12</sup> 7s <sup>2</sup>	101 <b>Md</b> Mendelevium 258.10 [Rn]5f <sup>13</sup> 7s <sup>2</sup>	102 <b>No</b> Nobelium 259.101 [Rn]5f <sup>14</sup> 7s <sup>2</sup>	103 <b>Lr</b> Lawrencium [260] [Rn]5f <sup>14</sup> 6d <sup>1</sup> 7s <sup>2</sup>

**RELATED WORDS (SYNONYMS) – ELEMENT**

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**INTUITION** – GUT FEELING / INSTINCTIVE KNOWING / AN IMPRESSION THAT SOMETHING MIGHT BE THE CASE



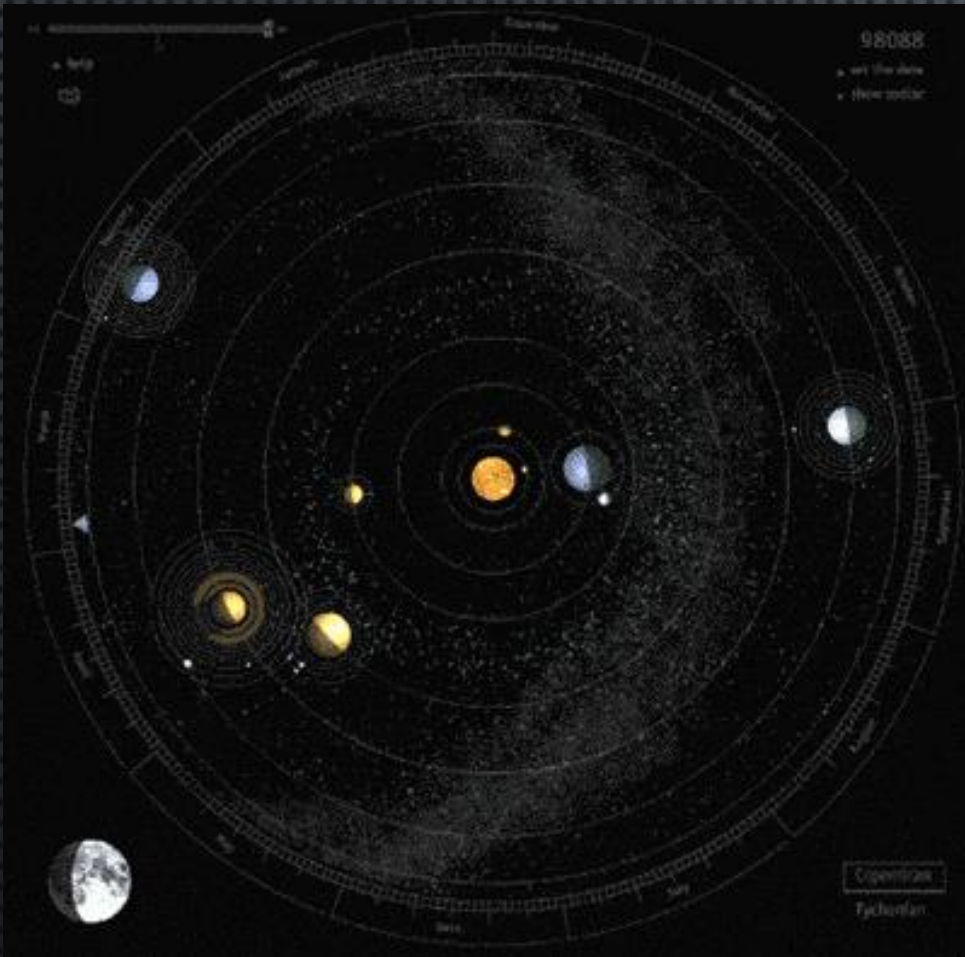
 <b>Intuition</b> Makes sense? What's your gut feeling?	 <b>Logic</b> Is the reasoning systematic?
 <b>Authority</b> Is the source credible?	 <b>Evidence</b> Is the evidence verifiable?



**RELATED WORDS ( SYNONYMS )** – HUNCH AND SUSPICION

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**Logic** - REASONED AND REASONABLE JUDGMENT / THE PRINCIPLES THAT GUIDE REASONING WITHIN A GIVEN FIELD OR SITUATION / A SYSTEM OF REASONING



**RELATED WORDS (SYNONYMS)** – REASON, JUDGMENT AND RATIONALITY

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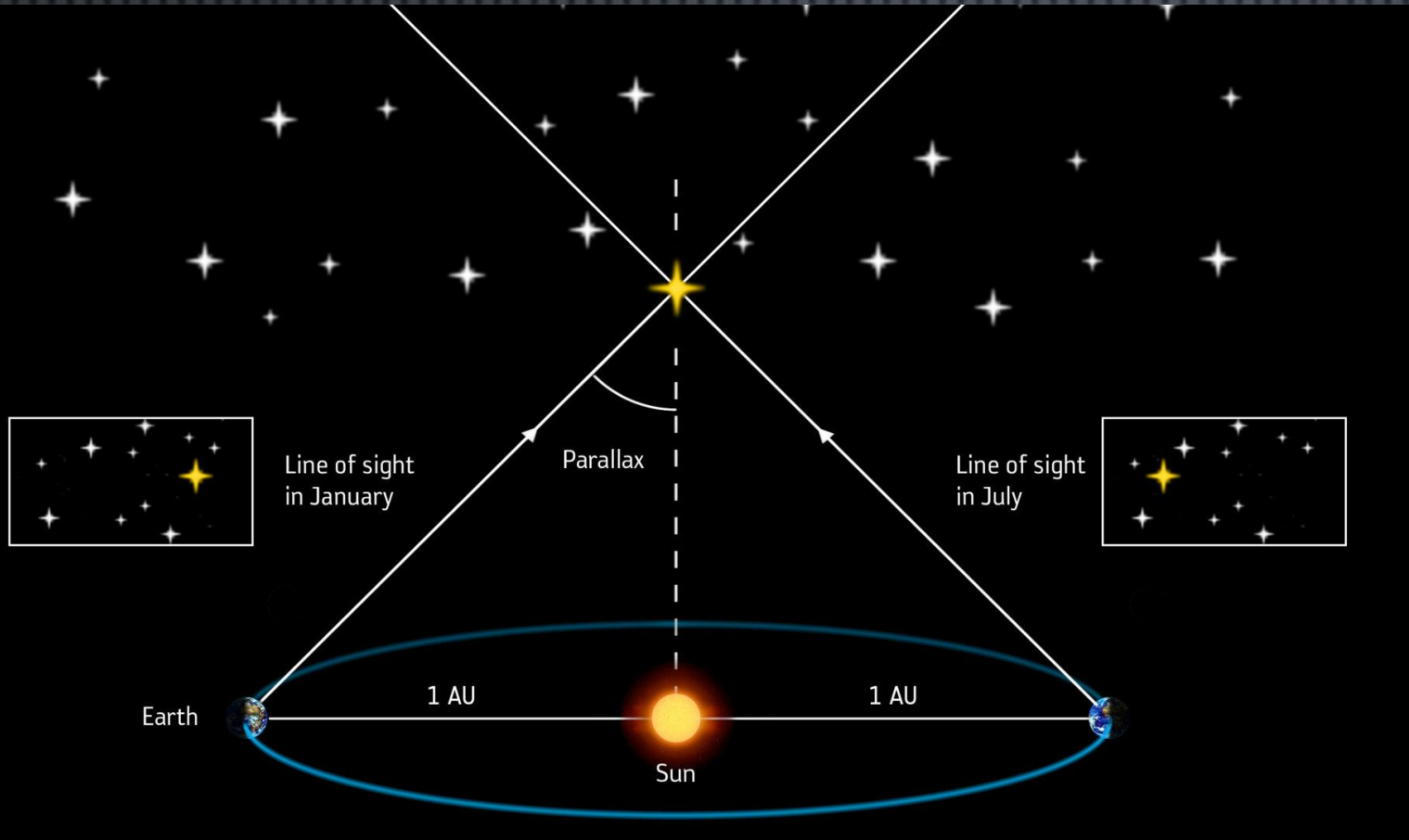
**OBSERVATION** - THE ACT OF MAKING AND RECORDING A MEASUREMENT / TAKING A PATIENT LOOK



**RELATED WORDS (SYNONYMS)** – NOTICE, REFLECTION AND WATCHING

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**PARALLAX** - THE EFFECT OF A POSITION OR DIRECTION OF AN OBJECT APPEARS TO DIFFER WHEN VIEWED FROM DIFFERENT POSITIONS. THROUGH THE VIEWFINDER AND THE LENS OF A CAMERA.



**RELATED WORDS (SYNONYMS)** – PARALLAX

**EXAMPLES (SENTENCES)** – THE TREE LOOKED CLOSER WHEN LOOKING THROUGH THE VIEWFINDER AND THE LENS OF A CAMERA.

/ PARALLAX CAN BE USED TO DETERMINE DISTANCE TO NEARBY STARS.

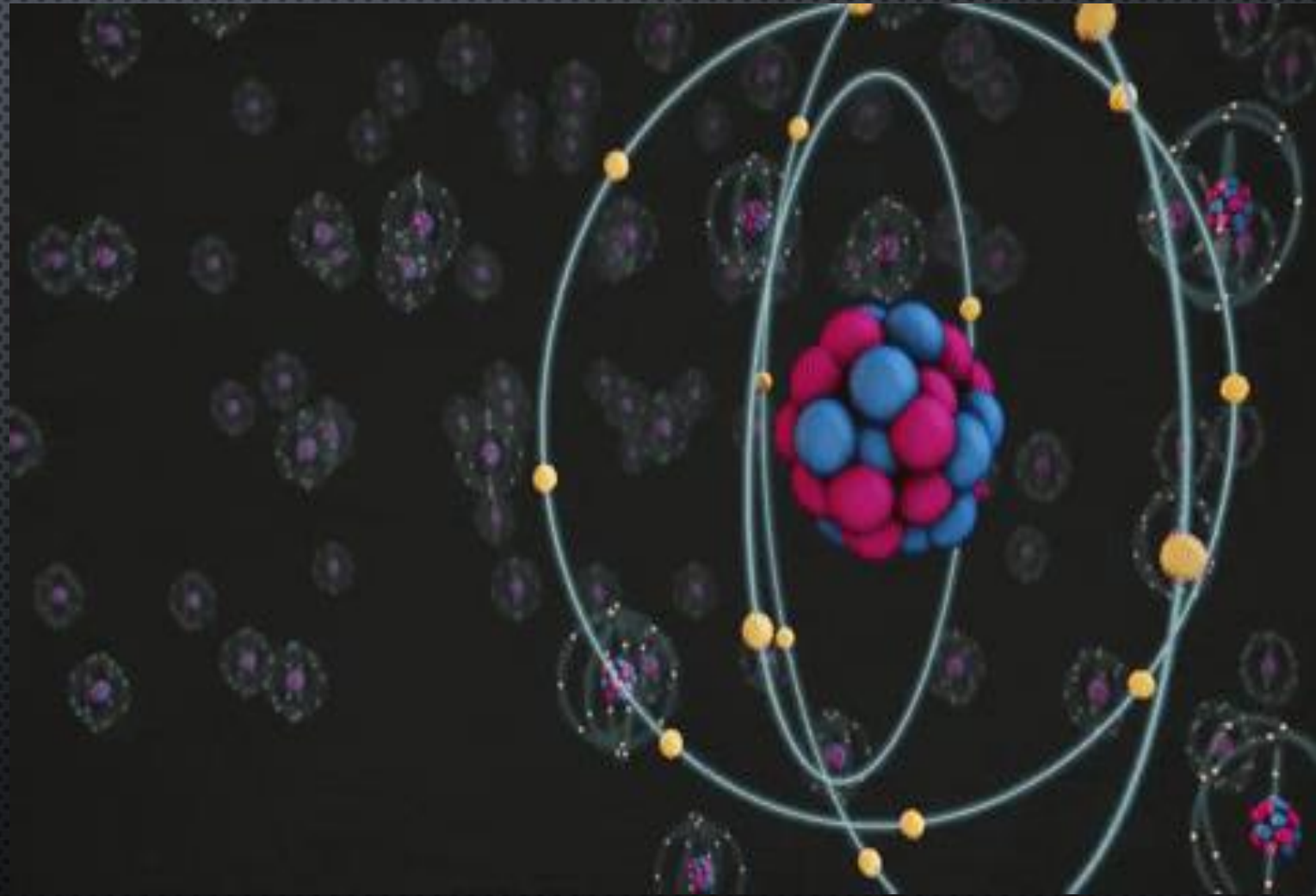
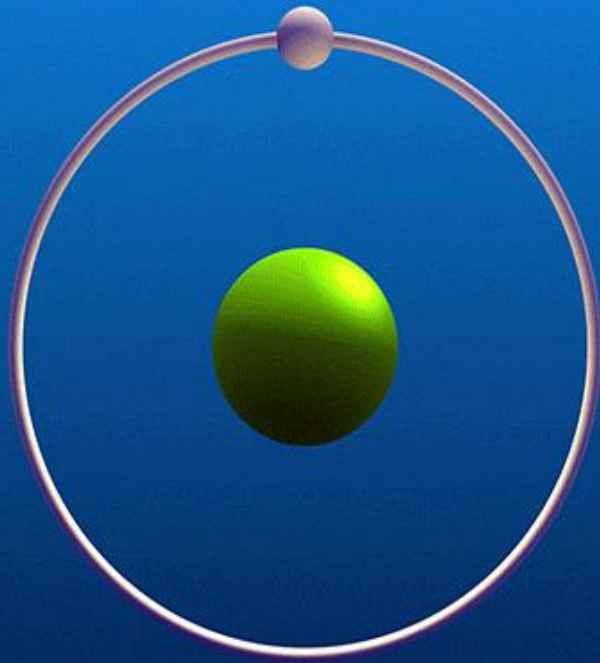
# UNIT 2 : THE BIG BANG VOCABULARY

**PROTON** - A STABLE PARTICLE WITH POSITIVE CHARGE EQUAL TO THE NEGATIVE CHARGE OF AN ELECTRON

1

H

Hydrogen  
1.00784  
p:1  
n:0



**RELATED WORDS (SYNONYMS)** – POSITIVE

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**REVOLUTION** - A DRASTIC AND FAR-REACHING CHANGE IN WAYS OF THINKING AND BEHAVING / THE OVERTHROW OF A GOVERNMENT BY THOSE WHO ARE GOVERNED



**RELATED WORDS ( SYNONYMS )** – ROTATION, REVOLT AND GYRATION

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**SCHOLAR** - A LEARNED PERSON (ESPECIALLY IN THE HUMANITIES); SOMEONE WHO BY LONG STUDY HAS GAINED MASTERY IN ONE OR MORE DISCIPLINES

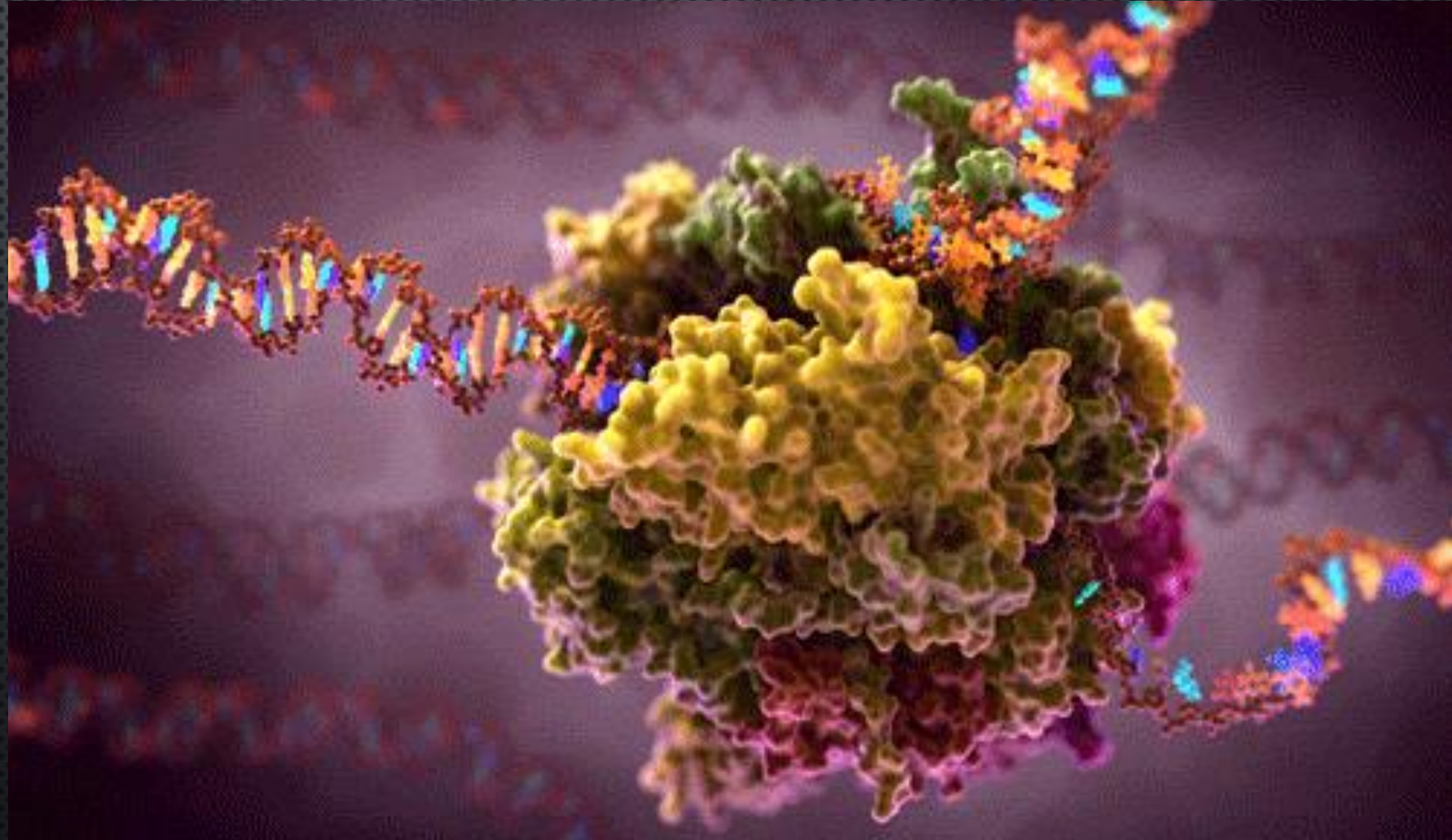


**RELATED WORDS ( SYNONYMS )** – BOOKMAN, LEARNER, STUDENT AND NERD



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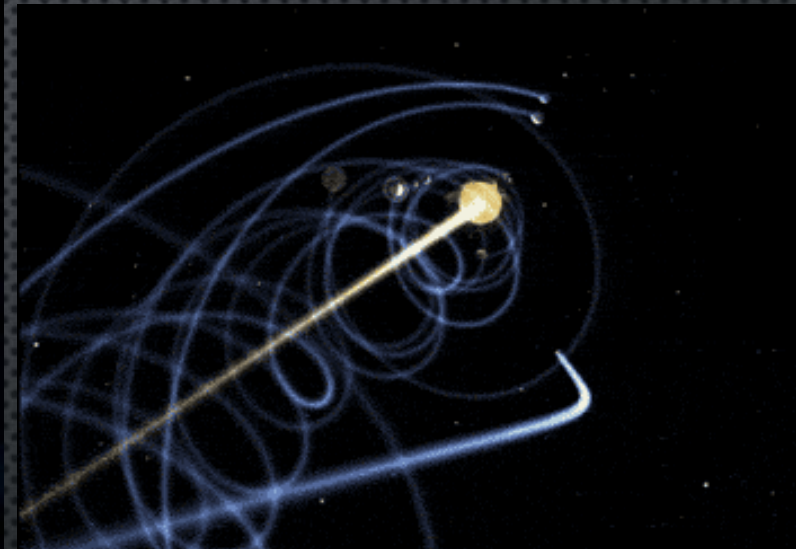
**SCIENTIFIC** - OF OR RELATING TO THE PRACTICE OF SCIENCE / FOLLOWING WITH THE PRINCIPLES OR METHODS USED IN SCIENCE



**RELATED WORDS ( SYNONYMS )** – TECHNICAL, SYSTEMATIC AND OMNISCIENCE

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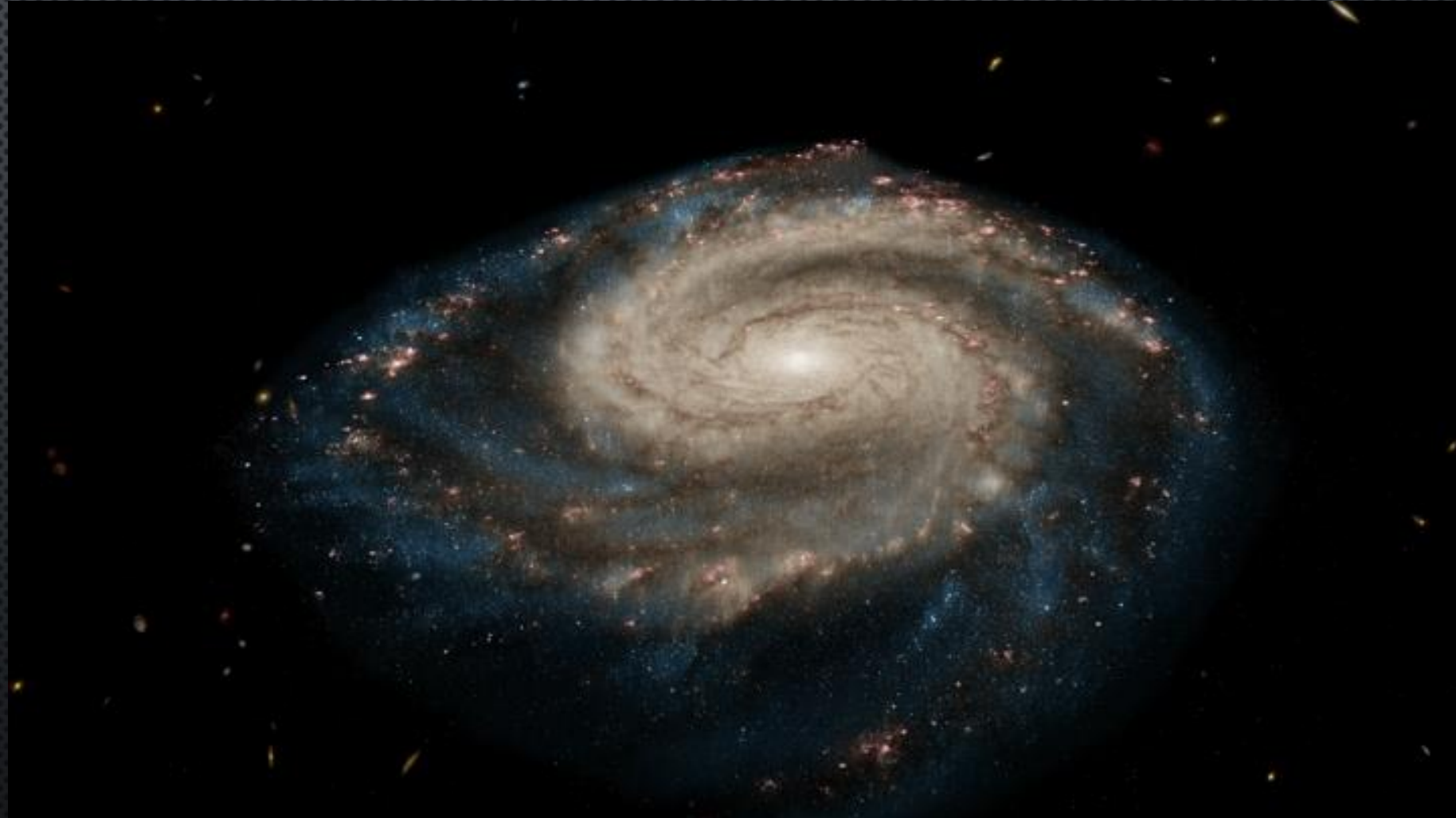
**SYSTEM** - A COMPLEX OF METHODS OR RULES GOVERNING BEHAVIOR / AN ORGANIZED STRUCTURE FOR ARRANGING OR CLASSIFYING / AN ORDERED MANNER



**RELATED WORDS ( SYNONYMS)** – ORGANIZATION, ARRANGEMENT AND STRUCTURE

# UNIT 2 : THE BIG BANG VOCABULARY

**UNIVERSE / BIG BANG** - EVERYTHING THAT EXISTS ANYWHERE / EVERYTHING STATED OR ASSUMED IN A GIVEN DISCUSSION



**RELATED WORDS ( SYNONYMS)** - COSMOS, CREATION, EXISTENCE AND THE WORLD

