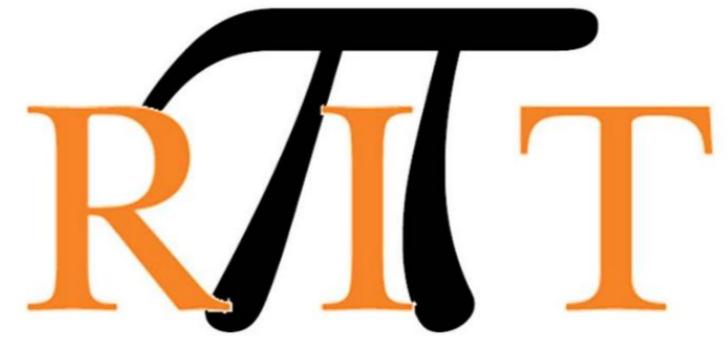


May 7th 2016
Michael R. Spink
Christine Van Oostendorp
Eric Peterson
Jared Wagner
Joshua Chasen
Lucas Stefanic
Orianna Henry
Tammy Mukherjee
Tyler Hayes
James Le



COLOSSAL CONSTRUCTIONS

WHAT CAN MATH TEACH US ABOUT ART?



STRUCTURES/ MATHEMATICAL STRUCTURES

- SO WHAT IS A STRUCTURE?
- WE WANT TO LOOK AT A VISUAL STRUCTURE, RATHER THAN THINGS LIKE GROUPS, RINGS, ETC
- ARE THERE INHERENT MATHEMATICAL IDEAS?



DR. GEORGE HART

- PROFESSOR AT STONY BROOK UNIVERSITY
- GREATLY INVOLVED AT MOMATH IN NYC
- LOVES DESIGNING DIFFERENT SCULPTURES IN HIS SPARE TIME AND DISPLAYING THEM AROUND THE WORLD



• WWW.GEORGEHART.COM

SO WHAT ARE GEORGE HART STRUCTURES (COMPARED TO OTHER STRUCTURES)?

- GEORGE HART STRUCTURES ARE STRUCTURES THAT RELY ON MANY OF THE SAME PIECE OCCURRING MANY TIMES TO CREATE A SYMMETRIC SHAPE.
- USUALLY, THEY HIGHLIGHT OTHER MATHEMATICAL IDEAS



SWORDFIGHT

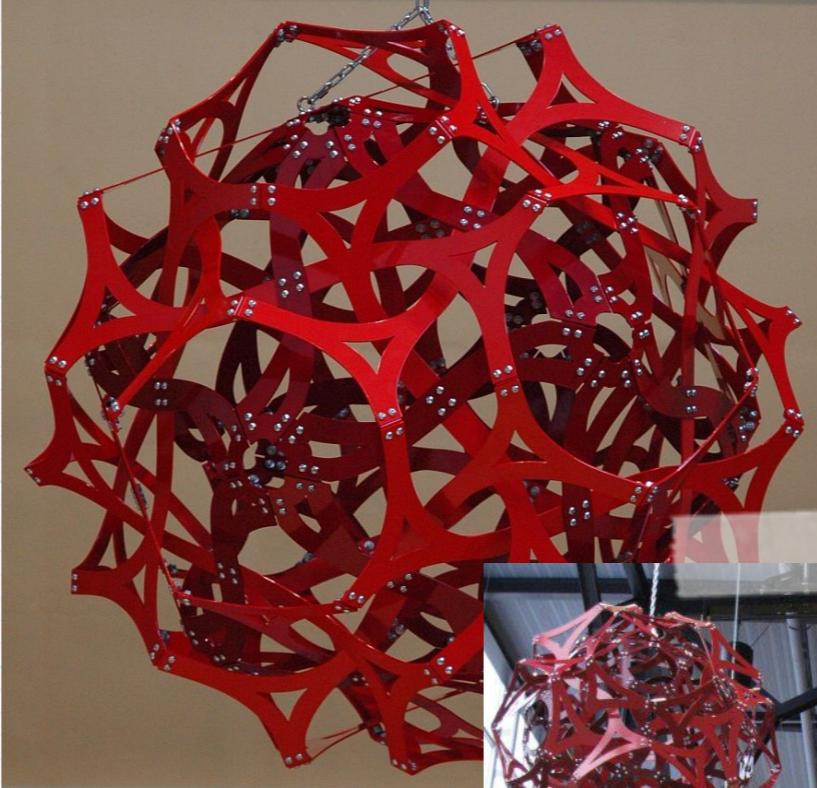
ELEPHANTS

- LOCATED AT PHILLIPS ACADEMY IN ANDOVER, MA
- APRIL 2014
- MIRROR IMAGE ORBS



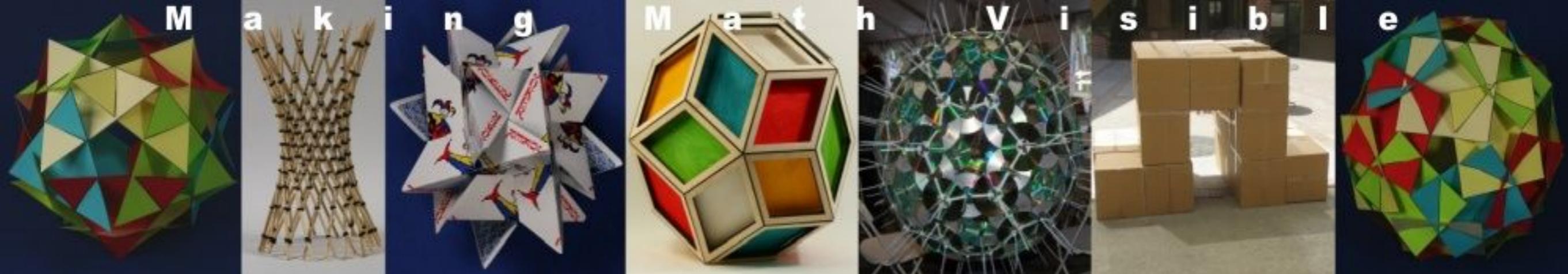
COMETS

- SEPTEMBER 13, 2008
- ALBION COLLEGE
- CURVY DODECAHEDRA
- THERE ARE 2 OF EACH COLOR, JUST IN DIFFERENT SHADES



M a k i n g

M a t h v i s i b l e



THERE ARE MANY, MANY
MORE DESIGNS. THIS IS
ESPECIALLY IN AN
EFFORT TO MAKE MATH
VISIBLE AND FUN





- MEANT TO LOOK LIKE A "CLOUD SHAPE"— FILLS AN ELLIPSOIDAL VOLUME
- MADE WITH DR. HART ON 3/18

CLOUDS



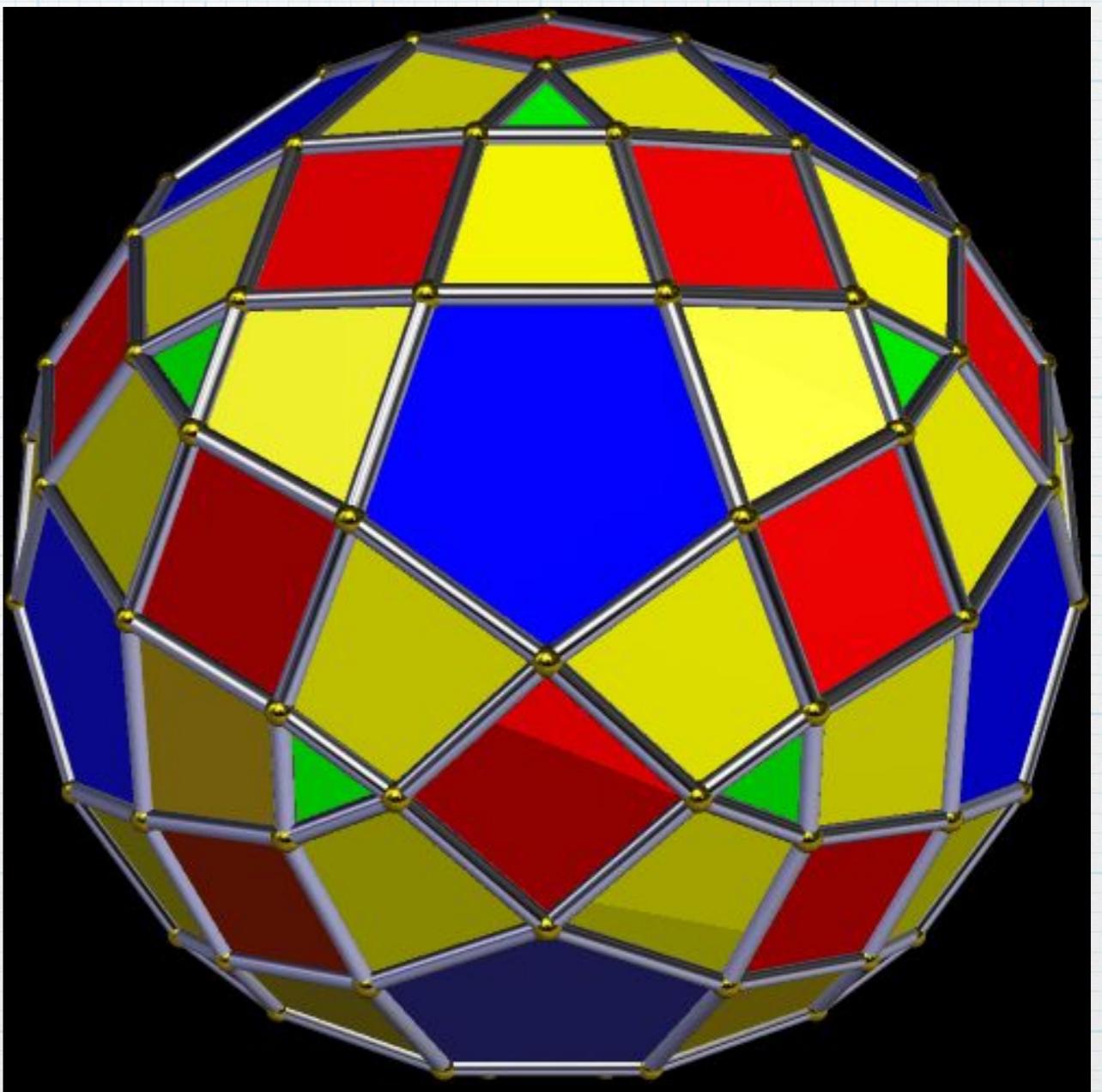
OUR STRUCTURE



- "ANOTHER GIANT GEOMETRIC CONSTRUCTION"
- THE UNDERLYING SHAPE IS A RHOMBICOSIDODECAHEDRON
- MADE OF CARDBOARD SCALED AND CUT TO SIZE VIA JIGSAW.
- HUNG BY PARACORD AND A SWIVEL (?) IN THE MIDDLE

RHOMBICOSIDODECAHEDRON

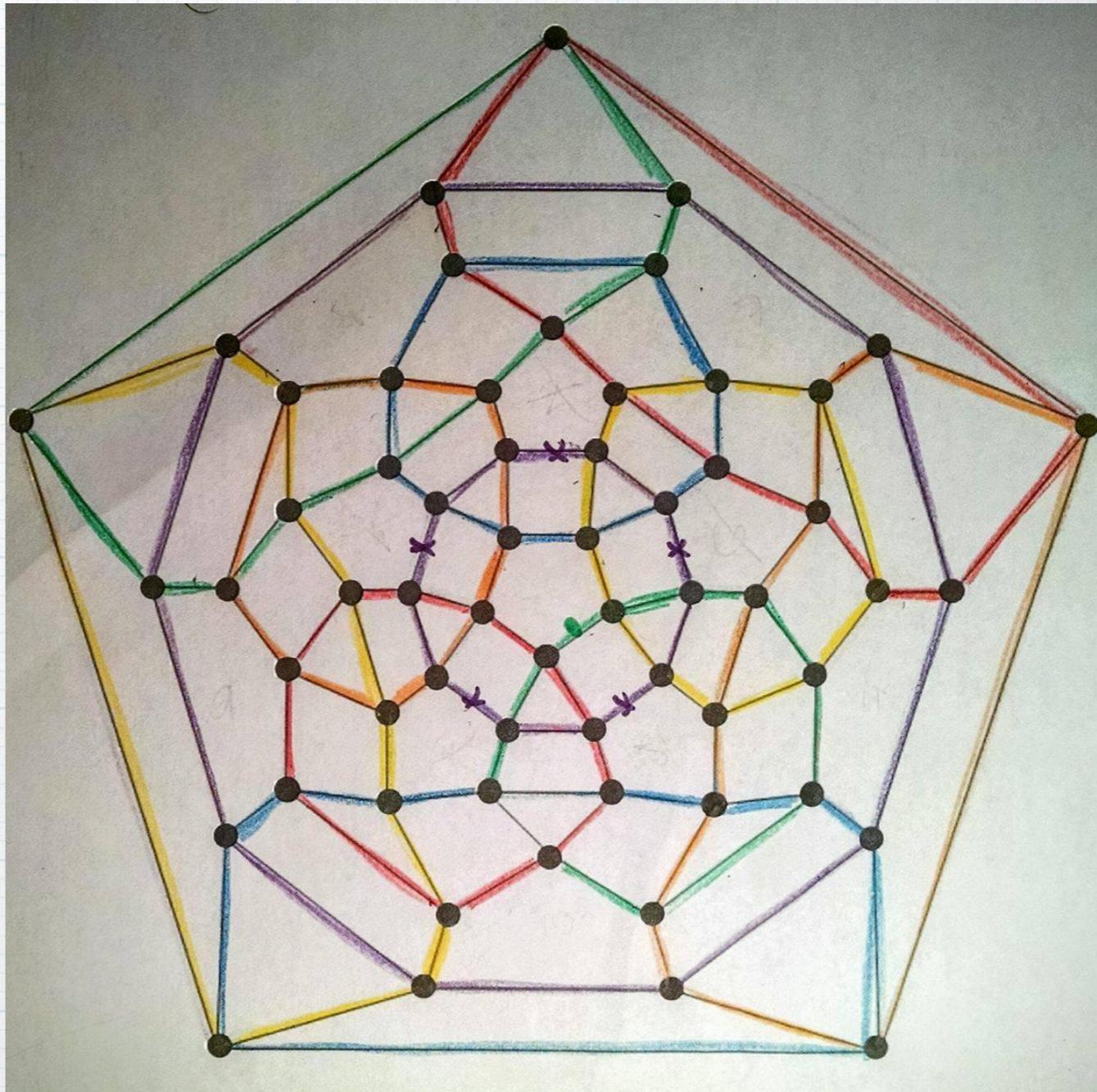
- 20 REGULAR TRIANGLES
- 30 SQUARE FACES
- 12 REGULAR PENTAGONS
- 60 VERTICES
- 120 EDGES



COLORING



SO THE COLORING THAT WE CHOSE INCLUDES 6 COLORS
NOTICE THE SIMILAR SHAPES
VERY SPECIFIC DESIGN
USED ACRYLIC PAINT
THAT WAS HAND PAINTED ON THE CARDBOARD





CONSTRUCTION

IN THE SMALL BUILD, WE ARE USING STAPLES (SHARP) AT THE JUNCTURES TO HOLD EVERYTHING TOGETHER



MOST OF THE PROCESS IS THE SAME!!!



IN THE FINAL BUILD, WE ARE USING WOOD GLUE TO HOLD IT TOGETHER SINCE THE PIECES ARE SO BIG.



PICTURE CREDITS



- . MOST PICTURES OF THE STRUCTURES ARE TAKEN FROM [GEORGEHART.COM](#)
- . EIFFEL TOWER: [WWW.HISTORY.COM](#)
- . RHOMBICOSIDODECAHEDRON- [ROBERTLOVESPI.NET](#)

THANK YOU!

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