

Divining the Elements (Solution)

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The first part of the puzzle shows six grids of varying sizes. Each grid contains a centered column that is highlighted in green, and each row contains one of six unique symbols. As clued by the title of this puzzle, these symbols are alchemical symbols for six different *chemical elements*. All of these symbols can be found on the [Wikipedia page for "Alchemical Symbol"](#). (Aside: several of these symbols are also classical planet symbols—pre-modern natural philosophers believed alchemy, astronomy, and divination were related.) This is how we can identify and use the feeder answers: each symbol's element matches a feeder that includes that element's (modern) chemical symbol as a substring.

Alchemical Symbol	Element	Chemical Symbol	Feeder
☽○	Platinum	Pt	PHOENICOPTERUS
♀	Mercury	Hg	FUHGEDDABOUDIT
†	Lead	Pb	RASPBERRYPI
✚	Antimony	Sb	MONSTERSBALL
☽	Silver	Au	ROOSTERSAUCE
●	Gold	Ag	VOLKSWAGENBUG

Once a feeder has been identified, it can be placed into the grid. As suggested by each row containing one symbol, we can place the feeders into the grid such that the chemical symbol is placed in the cell containing its associated alchemical symbol. Note that the feeders going off the edges of the grids don't matter—this is indicated by the edges of the grid being open without a border. (The grids are symmetrical and generally sized to fit the furthest-from-center alchemical symbol.) The important part is how the feeders overlap with the highlighted green column, which spells out a message.

An example for the first grid is shown below:

		P	H	O	E	N	I	C	O	PT	E	R	U	S		
F	U	HG	E	D	D	A	B	O	U	D	I	T				
						R	A	S	PB	E	R	R	Y	P	I	
								M	O	N	S	T	E	R	SB	A
		P	H	O	E	N	I	C	O	PT	E	R	U	S		
		P	H	O	E	N	I	C	O	PT	E	R	U	S		
0	N	S	T	E	R	SB	A	L	L							
		P	H	O	E	N	I	C	O	PT	E	R	U	S		
K	S	W	AG	E	N	B	U	G								
							P	H	O	E	N	I	C	O	PT	
				M	O	N	S	T	E	R	SB	A	L	L		
				V	O	L	K	S	W	AG	E	N	B	U	G	

The six grids yield six clue phrases related to natural features or phenomena. We find that some of these clue phrases are underconstrained, while the most direct interpretation of others don't fit the six enumerations following the grids at the top of page 3. The next key insight—clued by the flavor text "being present with where you are"—is that the answers are all notable features or phenomena in Antarctica, the setting of this hunt's story. This yields answers that fit the enumerations in the same order as the grids and are also given in alphabetical order for further confirmation.

Clue Phrase	Enumeration	Antarctica Feature (alpha ordered)
COSMIC LIGHTS	6 9	AURORA AUSTRALIS
FIERCEST GALES	9 5	KATABATIC WINDS
VATEST POOL	4 6	LAKE VOSTOK
COMPASS CONFOUNDER	8 5 4	MAGNETIC SOUTH POLE
MOLTEN CALDERA	5 6	MOUNT EREBUS
LOFTIEST PEAKS	6 6	VINSON MASSIF

Next, we have the sets of colored cards, colored circles, and a row of three question marks.

Each card has a die and a number. The die simply map to our Antarctica features in the same order, e.g., ☐ to AURORA AUSTRALIS, ☐ to KATABATIC WINDS, etc. The numbers are used to index into the names of the features. Doing so yields the following:

Cards	Extracted Message
Purple	PIECEOF
Blue	ARISTOTLE
Red	ICHING
Yellow	PLANETEER

These messages are clues that help explain the colored circles, which together form a Venn diagram. The eight gray filled circles represent *set elements* (in the sense of set theory). Six of the gray circles have dashed boxes, while the remaining two have colored question marks that match the row of question marks for extraction.

By treating the card messages as clues for the sets, and realizing that the six Antarctica features we had before can be associated with *classical elements*, we can identify the Venn diagram as depicting three classical element systems.

Clue	Classical Elements System	Elements
ARISTOTLE	Aristotelian/Ancient Greek	Air, Earth, Fire, Water, (Aether)
I CHING	Wuxing/Taoist	Earth, Fire, Water, Metal, Wood
PLANETEER	Captain Planet	Air, Earth, Fire, Water, Heart

And the mapping of the Antarctica features to classical elements are as follows:

Antarctica Feature	Element
AURORA AUSTRALIS	Aether
KATABATIC WINDS	Air
LAKE VOSTOK	Water
MAGNETIC SOUTH POLE	Metal
MOUNT EREBUS	Fire
VINSON MASSIF	Earth

Placing everything into the Venn diagram lets us identify the yellow question mark as **HEART** and the red question mark as **WOOD**. Combining these with the purple question mark (the extracted message from the purple cards) yields the final answer, **PIECE OF HEARTWOOD**.

Construction notes

This was the first metapuzzle I've ever written, and I'm really happy with how the "elements" concepts in this puzzle came together, especially the ending. Surprisingly, the ending was actually the last part of the puzzle I wrote, despite being a really fun extraction specific to this answer.

This puzzle started with the answer **PIECE OF HEARTWOOD** as dictated by the finale. Compared to the other meta answers in the hunt, it felt the least thematically related to penguins making demands about their carousing around the research station. To make this answer feel more integrated with the story and setting of the hunt, I focused on what might be a possible Antarctica connection. Some light research quickly turns up the fact that there are no naturally

growing trees in Antarctica today, but there are fossils from ancient forests in the distant past. This led to theming around nature magic, which led to divination and classical elements. The Fortune Teller as a character was born to provide a story justification.

The first version of the puzzle was much simpler. The clues for the Antarctica features were themselves the feeder answers. After identifying six Antarctica features, symbols representing the six relevant classical elements were used for extracting letters from them. This was way too easy. With just a few feeders revealed, the first testsolver was able to guess the Antarctica features from enumerations and the classical element associations.

Changing to feeders that incorporated chemical elements felt like an effective puzzle double-meaning for "elements". Alchemical symbols were a natural way of indicating the elements that felt thematic and required an identification step. Eshan, the editor for this puzzle, had the great suggestion of entering the feeders into a grid as an interesting presentation of extracting letters from the feeders.

This version of the puzzle still felt too simple and shallow. I already had the general idea that the six classical elements I picked were the union of Aristotelian and Wuxing elements minus Wood. Then, I had the brainwave that Heart was also an element from Captain Planet. This led to the three-set Venn diagram, and I couldn't believe I hadn't written the puzzle that way all along.

One thing I learned from writing this puzzle is that extracting a lot of letters from feeder answers leads to a lot of risk of wheel-of-fortuning (WOFing) and backsolving by strong solvers. This puzzle has somewhat bimodal outcomes because the aha about alchemical symbols and filling the grid can be tricky, but someone who figures it out early can pretty easily WOF the clue phrases. (FUHGEDDABOUDIT is especially load-bearing and hard to hide.) The full testsolve team was able to break in on WOFing an earlier version of the puzzle with only two feeders. This led me to do a lot of tinkering with the clue phrases and the letter extractions to make it more difficult, given the known unlock order of the feeders in the hunt. The final version of the puzzle ended up being fairly difficult (though not impossible) to WOF up through the first three feeders.

Another interesting aspect of this puzzle is that a solver who has a major brainwave could skip the first step, or potentially even the first two. It's possible to combine insights about classical elements (from the title), Antarctica (from the flavor text), and the six enumerations to directly guess the Antarctica features. It's also possible to recognize the Venn diagram as depicting classical elements and extract at least HEART and WOOD.