THE PUZZLING SIDE OF CHESS

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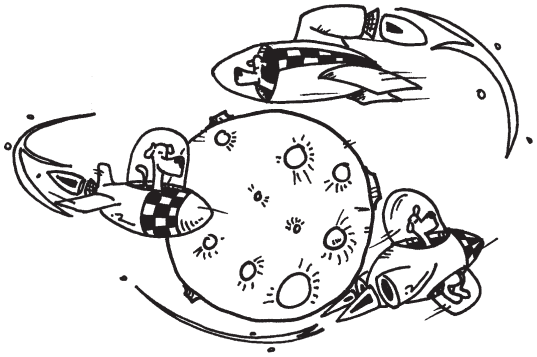
CYCLOTRONIC MINDWARP:
Chessboard Vertigo

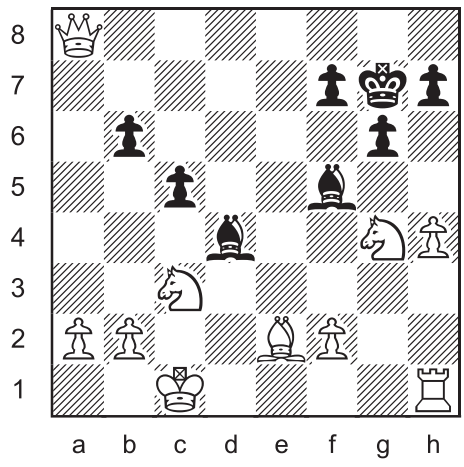
number 130 January 14, 2017

This column presents five more cyclotrons in the Mindwarp series. Hopefully your mental stabilizers are still in tact.



A *cyclotron* is a three-way switcheroo. Instead of switching two pieces, we switch three. The rules are given below.

Cyclotron 53



Cycle three pieces so that Black is in checkmate.

CYCLOTRONS

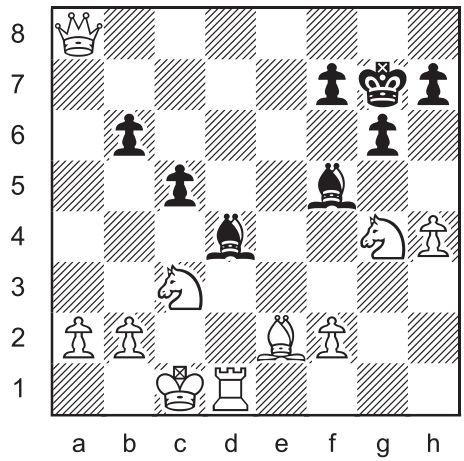
Switch the position of three pieces so that Black is in checkmate. No actual chess moves are made. The pieces simply swap squares. The pieces trade places in a "cycle". Piece A goes to square B, piece B goes to square C, and piece C goes to square A.

Any three pieces can trade places. Colours do not matter. The cycled pieces can be all white, all black, or a mix of both. Cycling the black king is a common trick.

The position after the cycle must be legal. This rule implies several things.

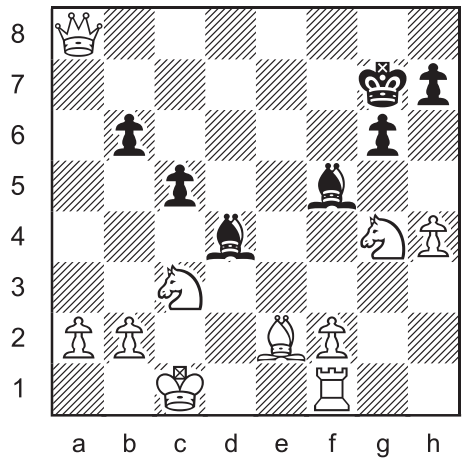
- *a) A pawn cannot be on the 1st or 8th rank.*
- *b) Both kings cannot be in check.*
- *c) There must be a way to reach the position with a legal white move. Impossible checks, especially double checks, are a frequent "violation".*
- *d) In some cases, retrograde analysis is required to decide if the position after a cycle is legal.*

Cyclotron 54



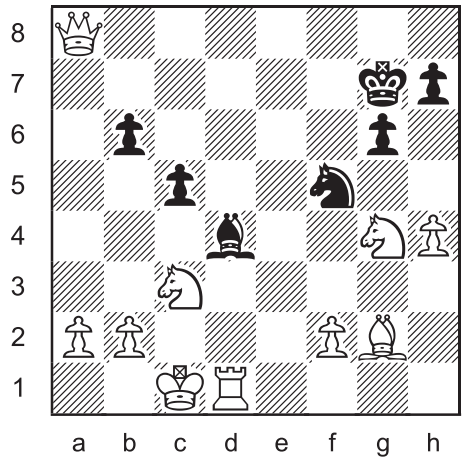
Cycle three pieces so that
Black is in checkmate.

Cyclotron 55



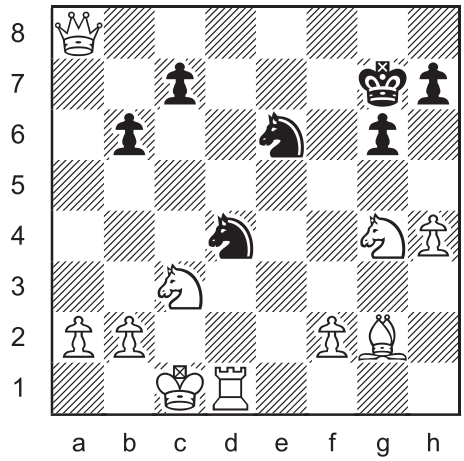
Cycle three pieces so that
Black is in checkmate.

Cyclotron 56



Cycle three pieces so that
Black is in checkmate.

Cyclotron 57



Cycle three pieces so that
Black is in checkmate.

The Warped Chessboard Sandro Del-Prete 1975

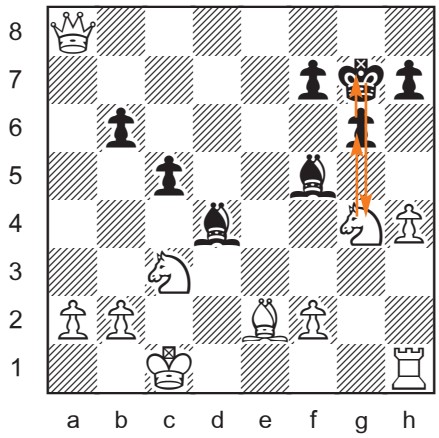
SOLUTIONS

All cyclotrons by J. Coakley. *Puzzling Side of Chess* (2017).

PDF hyperlinks. You can advance to the solution of any puzzle by clicking on the underlined title above the diagram. To return to the puzzle, click on the title above the solution diagram.

Archives. Other columns with similar problems can be found in the Puzzling Side archives (55, 89, 92, 95, 119, 126, 128). For more information on ordinary switcheroos, see column 4.

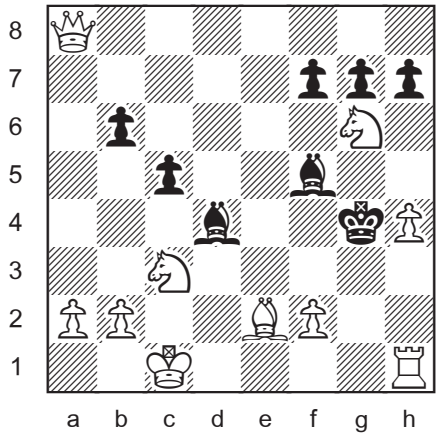
Cyclotron 53



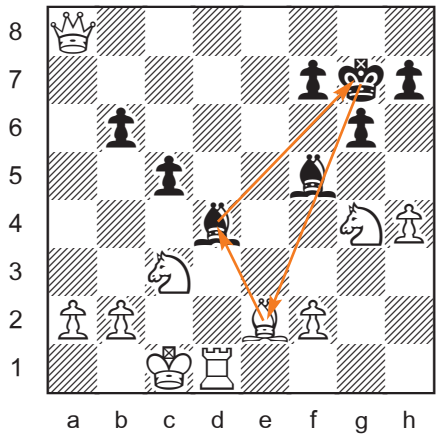
Ng4→g6 g6→g7 Kg7→g4

The g-file shuffle. A rare non-triangular cycle.

The order in which the pieces are cycled is not important. The resulting position will still be the same. See diagram below.



Cyclotron 54

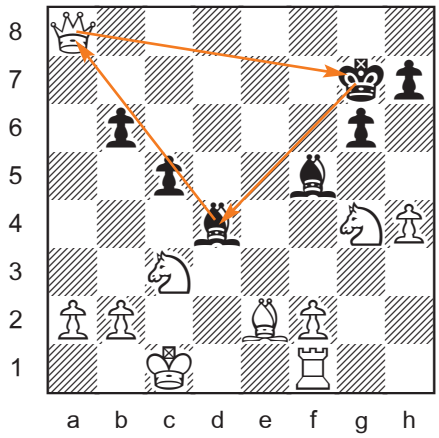


Bd4→g7 Kg7→e2 Be2→d4

Cyclotrons and helpmates have something in common:
a cooperative black king.

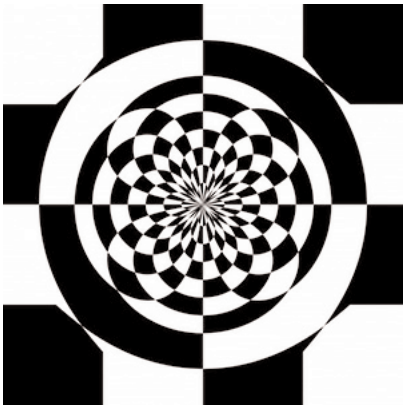
The cycle Qa8→g7 Kg7→d4 Bd4→a8? is an impossible double check.

Cyclotron 55

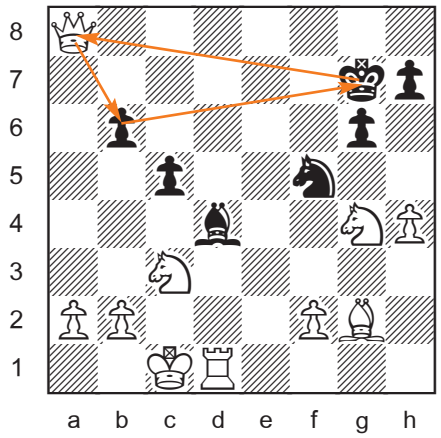


Qa8→g7 Kg7→d4 Bd4→a8

Without a pawn on f7, the check cannot be blocked by ...f7-f6.



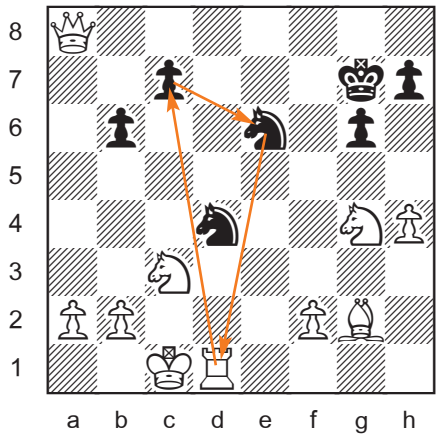
Cyclotron 56



Qa8→b6 b6→g7 Kg7→a8

Feeling dizzy? Try a glass of water.

Cyclotron 57



c7→e6 Ne6→d1 Rd1→c7

For once, the black king stays put.

The cyclotrons in this column share the same “zero position” as those in columns 126 and 128. Check back next month for the conclusion of the *Cyclotronic Mindwarp* series.

Until next time!