ROC stability check for Run23

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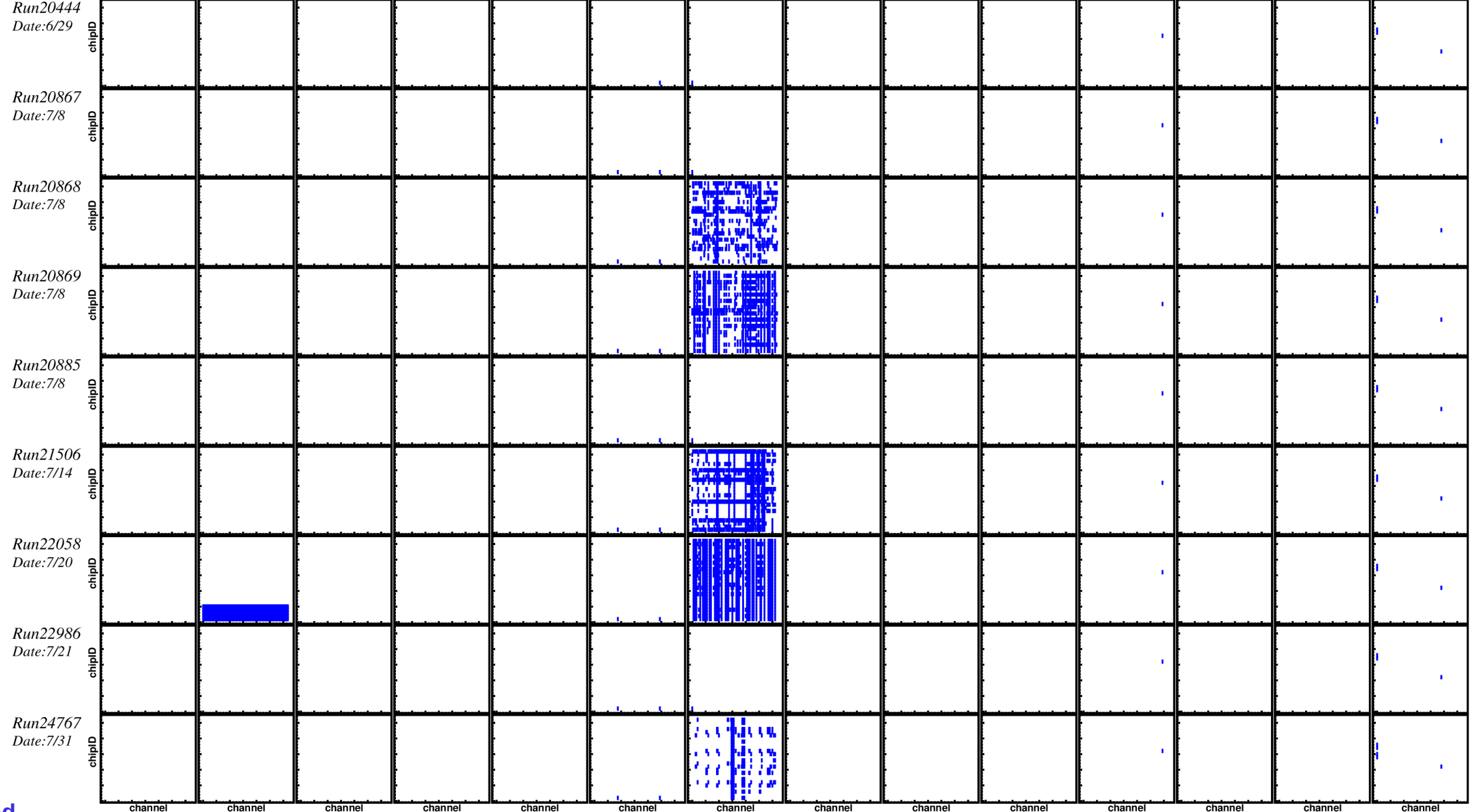
How to check the ROC instability for Run23

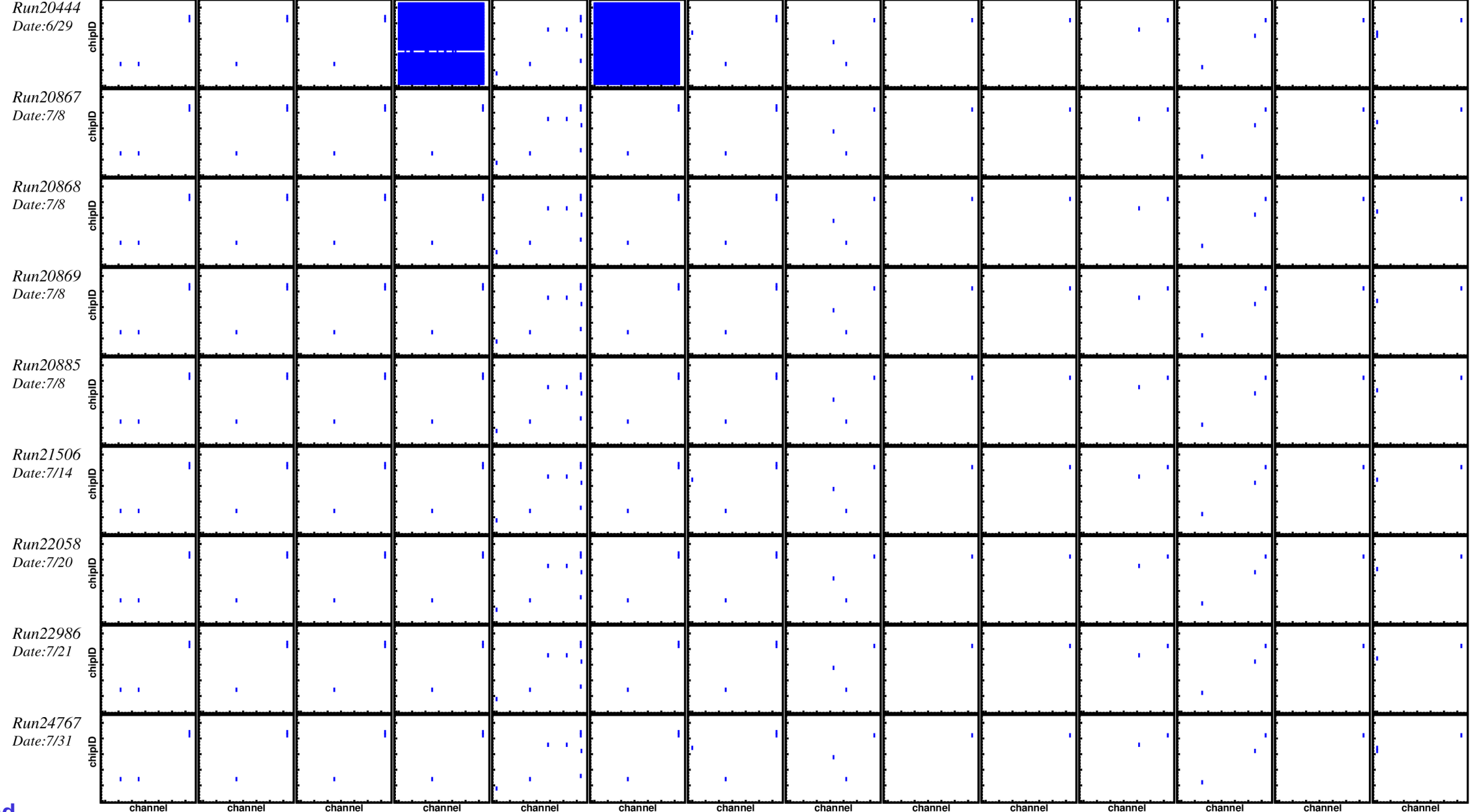
- Based on Jaein's dead map files (Many thanks to Jaein for quickly creating the map files!)

- Following 9 runs are picked up (randomly but to cover at least one run per week)
  - Run20444; 6/29
  - Run20867, 20868, 20869, 20885; 7/8
  - Run21506; 7/14
  - Run22058; 7/20
  - Run22986; 7/21
  - Run24767; 7/31

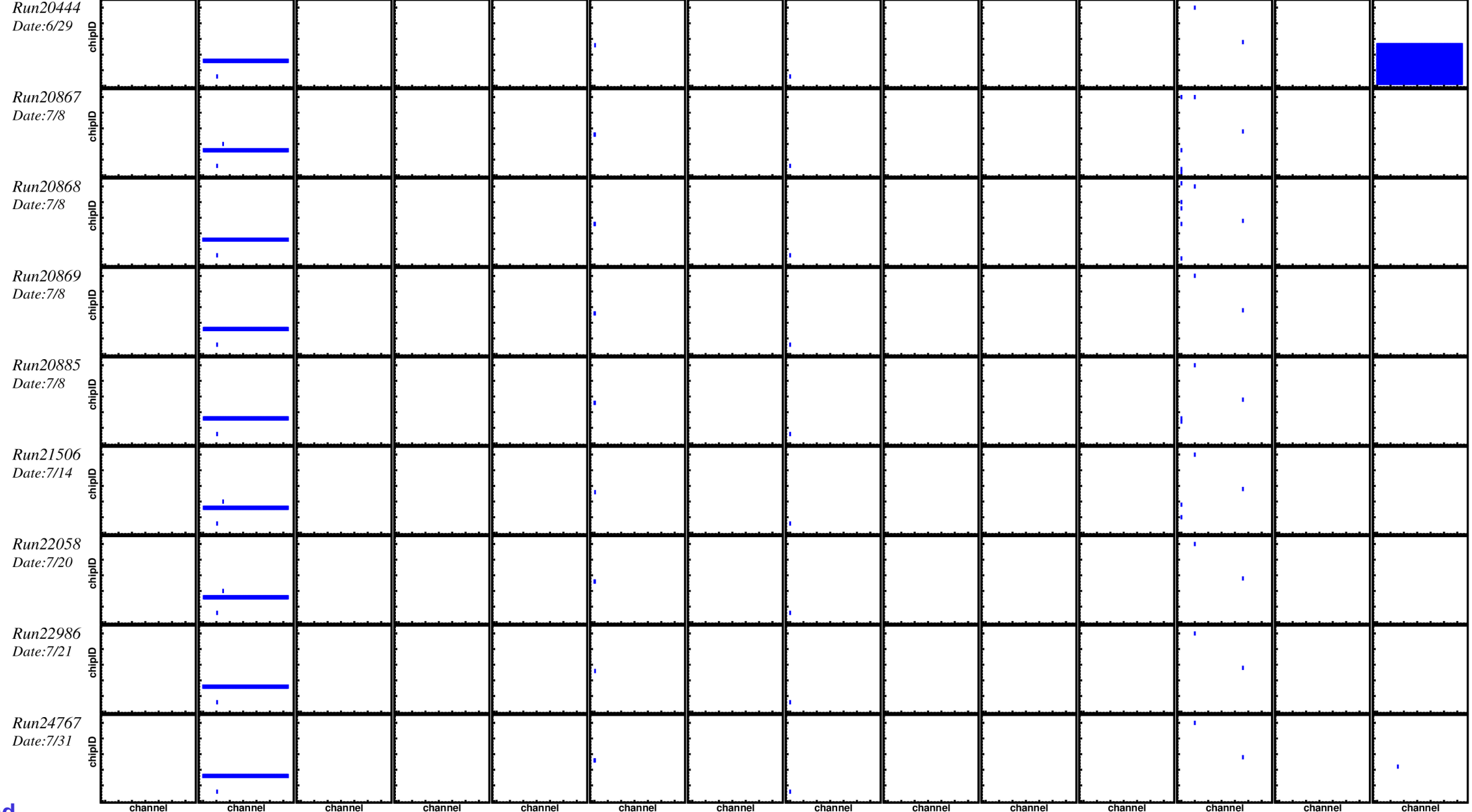
- Information of runs, ladder ID, ROC number, port number etc, is based on the following spreadsheets.
  - https://docs.google.com/spreadsheets/d/19PSvkhAQA8rnkP0z_wpN87CWQ6O-f3bT/edit#gid=1658598300
  - https://docs.google.com/spreadsheets/d/11jsgrsI7pS02Ia_Huew4Fw-nbNwOzI6VhbI0nRYUX-w/edit#gid=1976652756
  - https://docs.google.com/spreadsheets/d/1Cj2CWWw6psGGJb9fU8SJ0dxWAL2nAFakSCiorTXfm7A/edit#gid=0



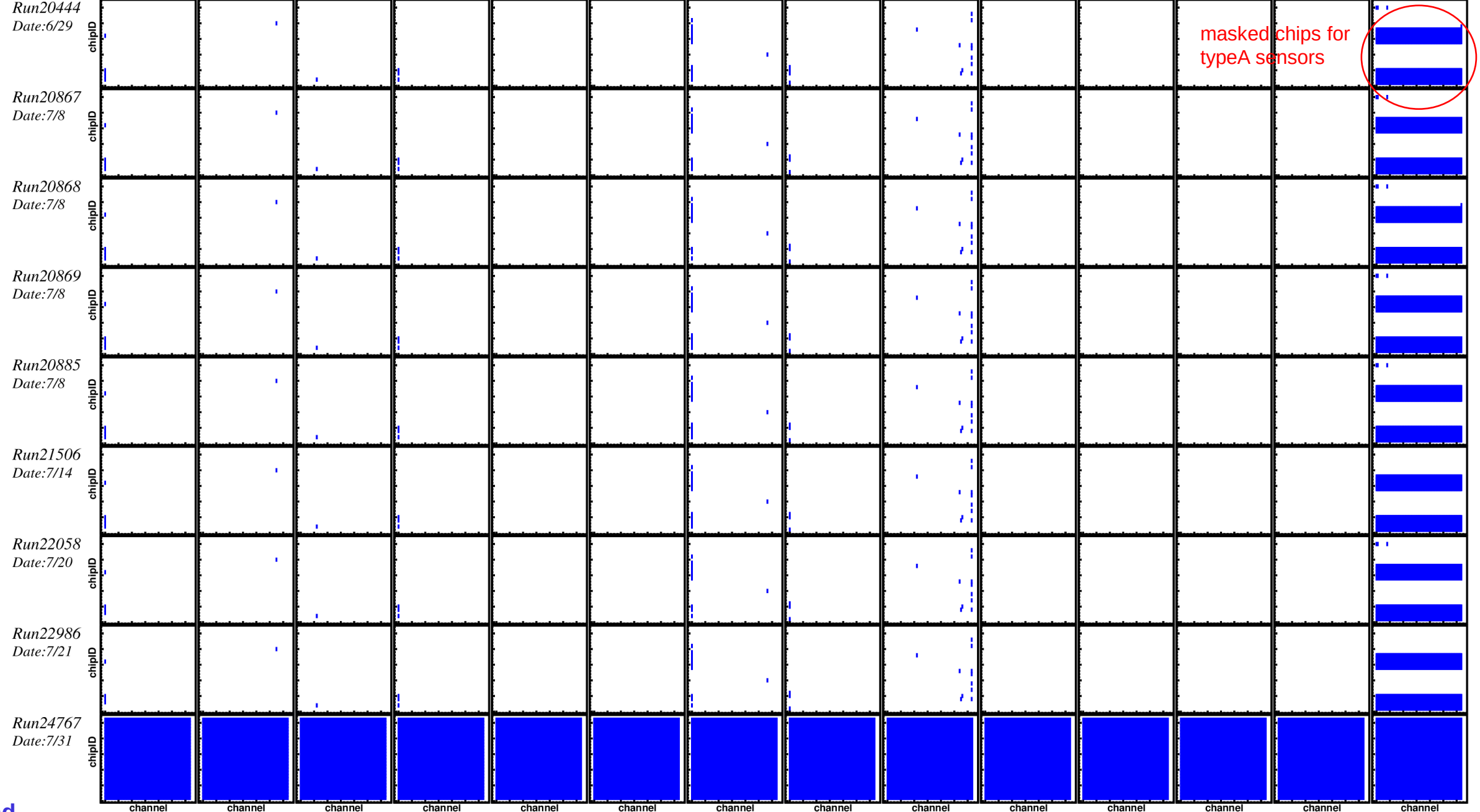
Dead channel map



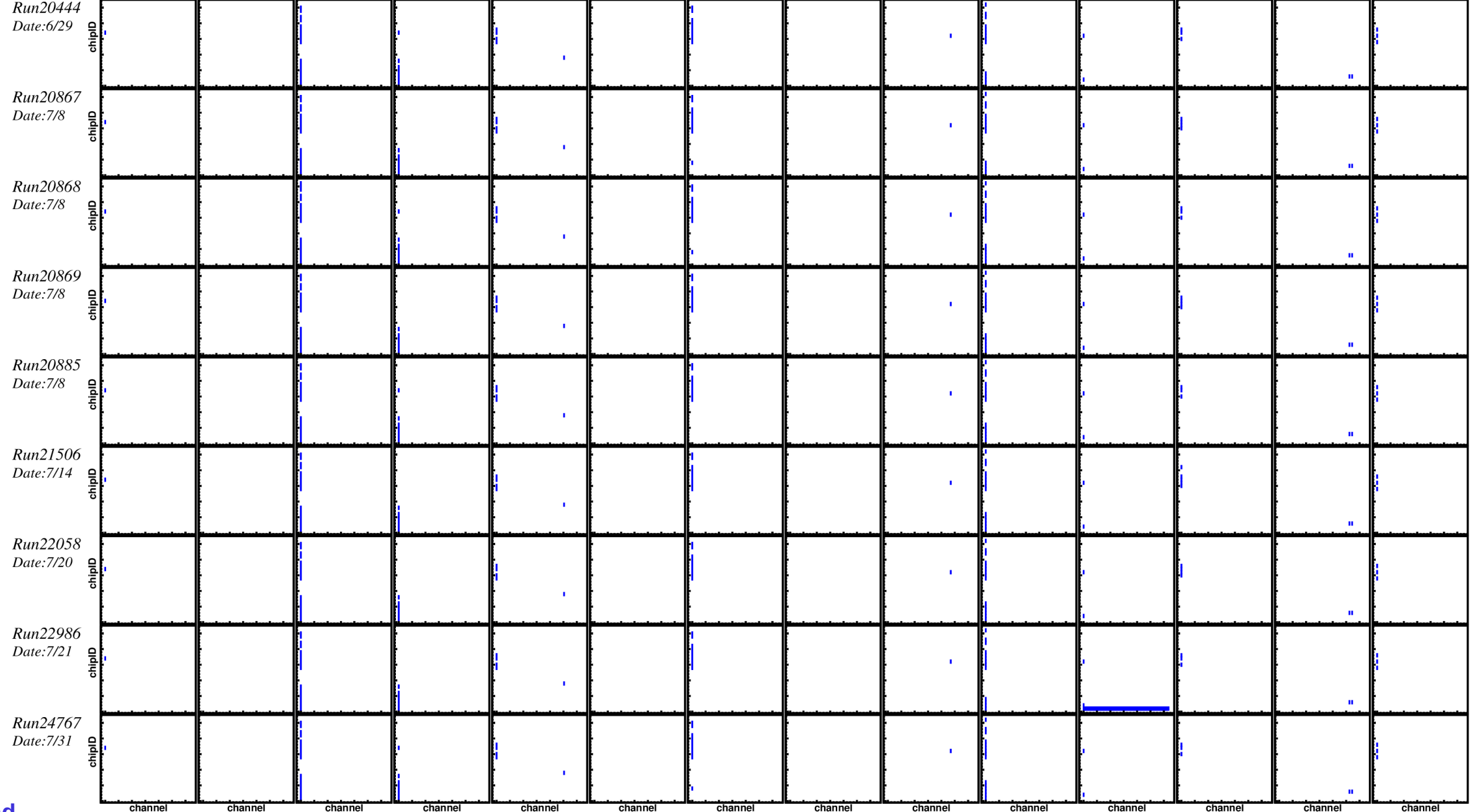
Dead channel map



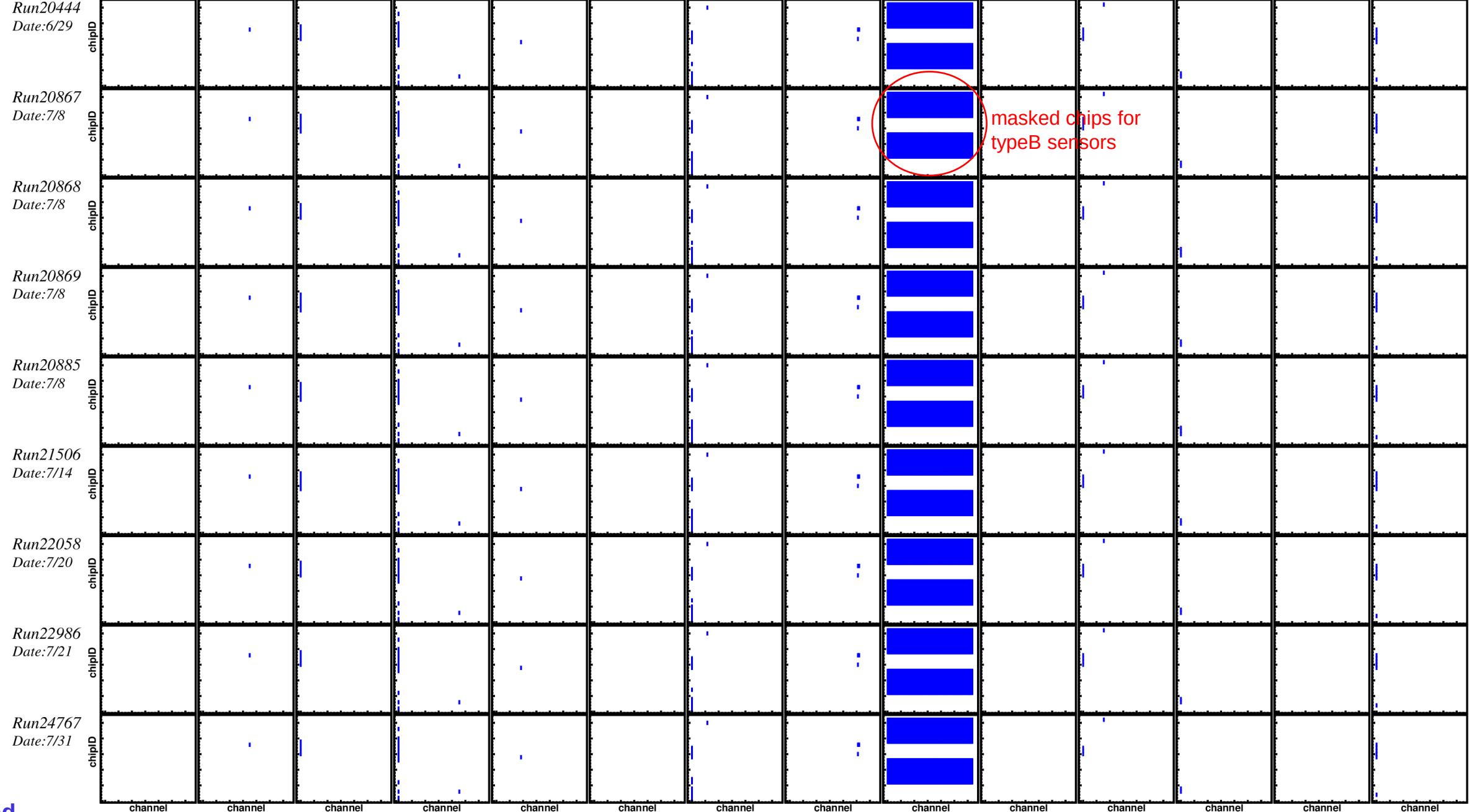
Dead channel map



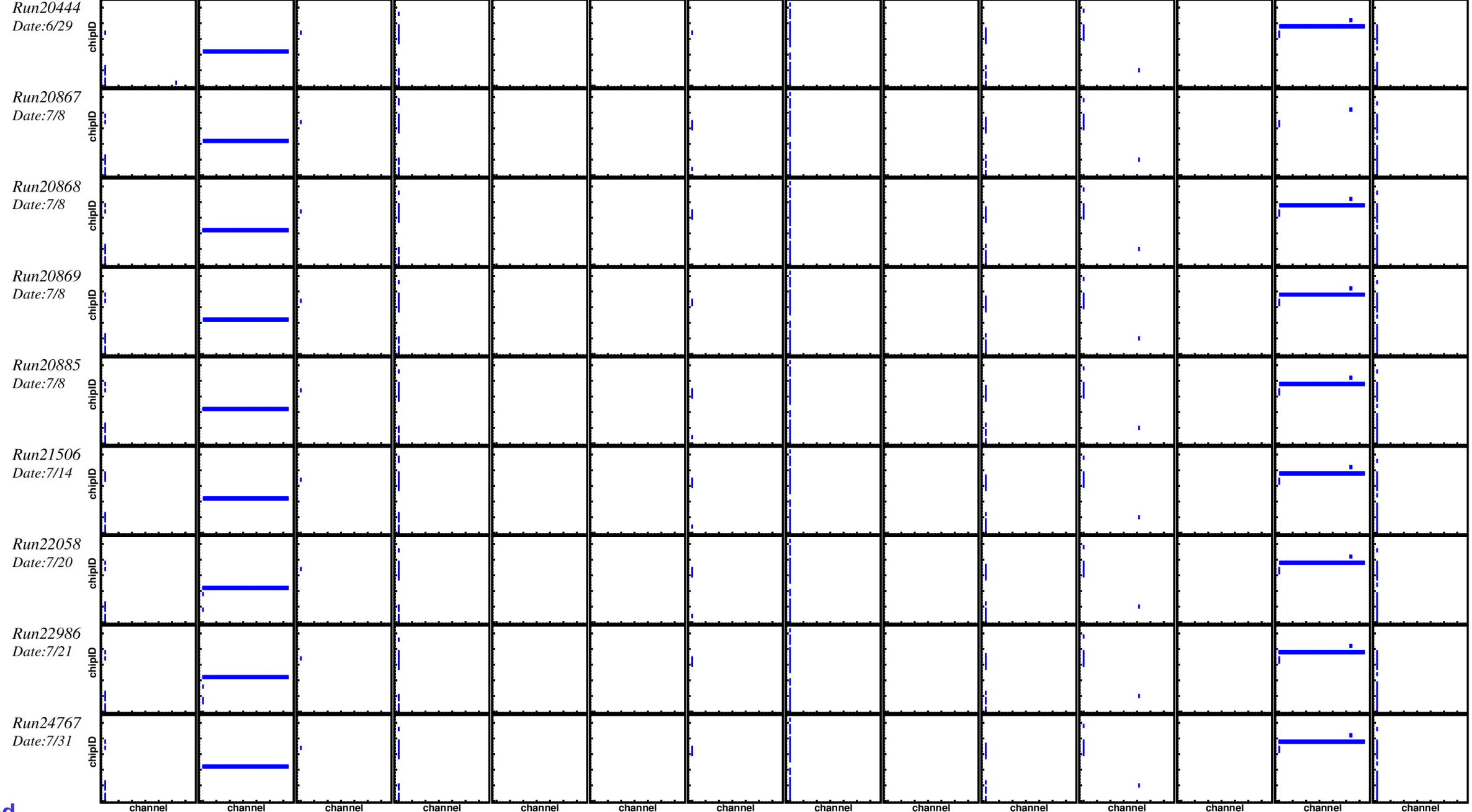
Dead channel map



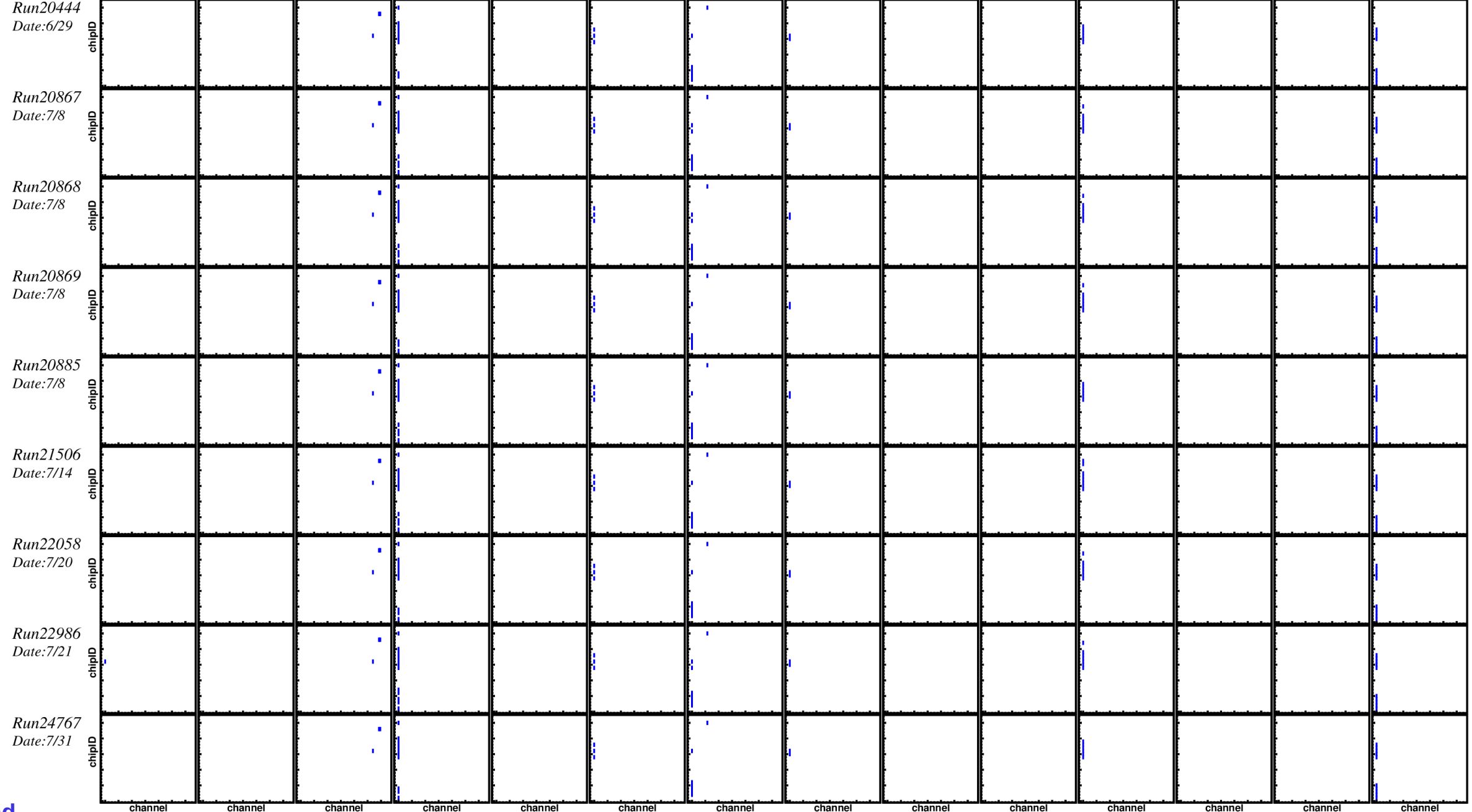
Dead channel map



Dead channel map



Dead channel map



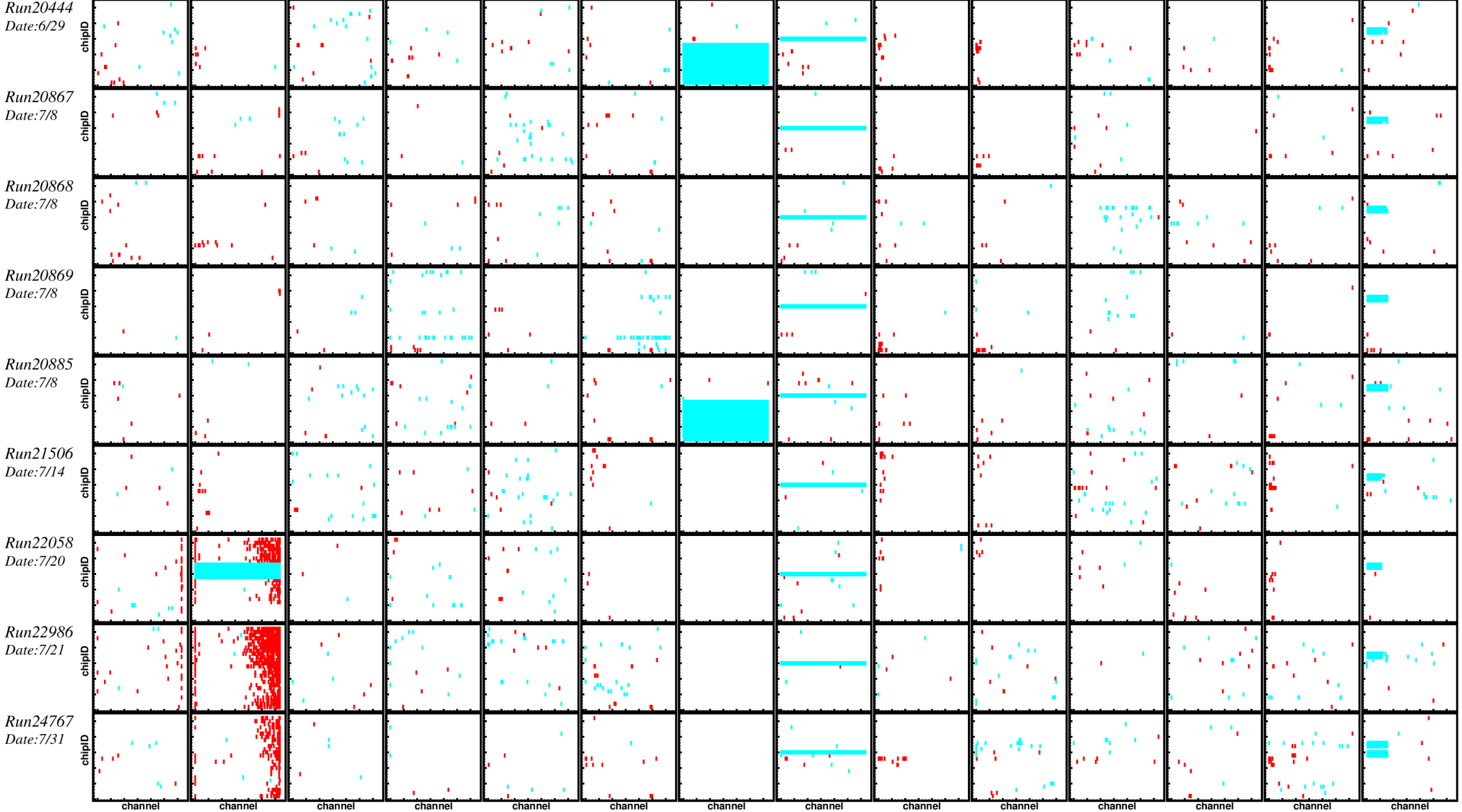
Dead channel map

Result

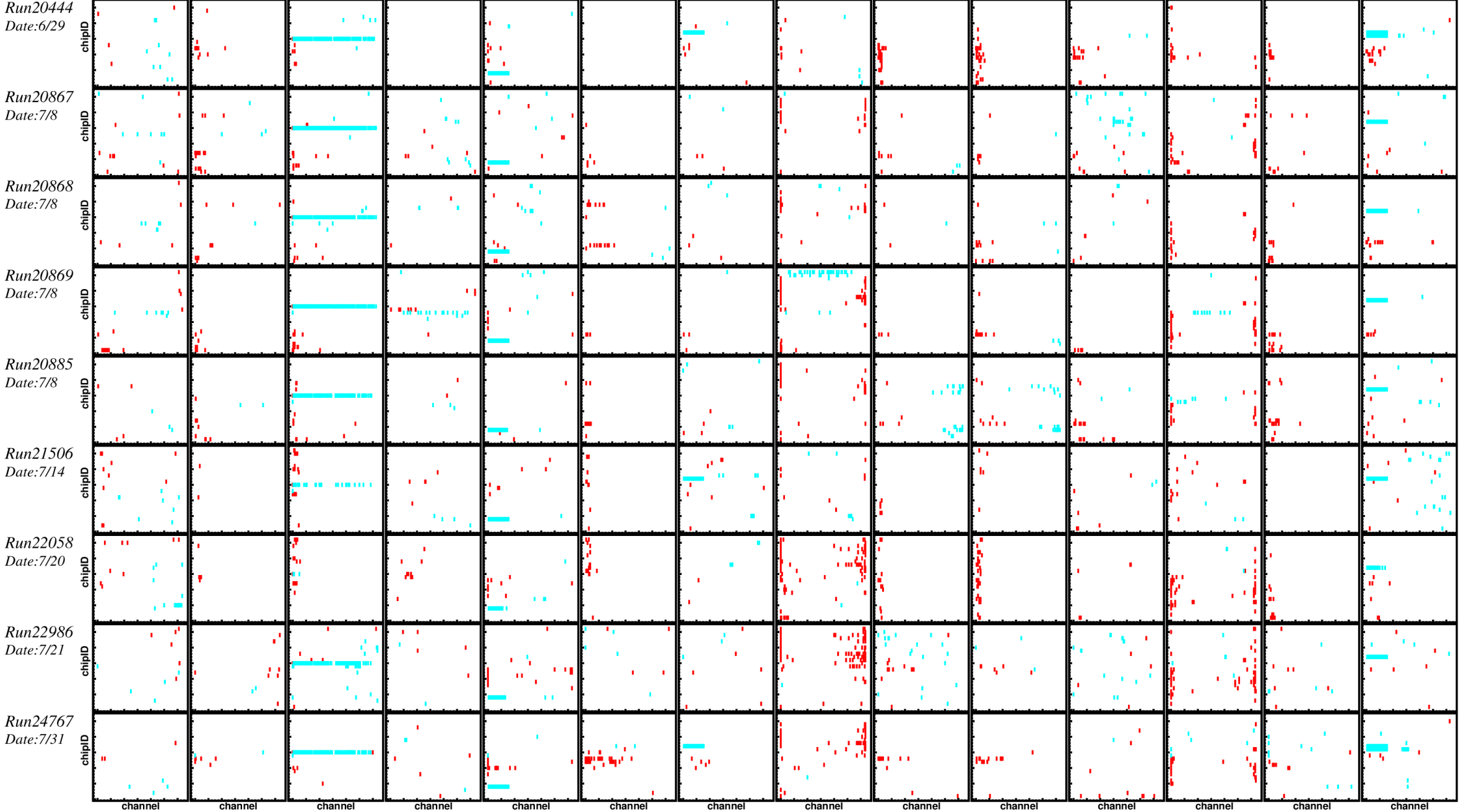
- Port A1 on RC-0S (ROC#6) shows run-by-run instability. Should be best avoided.
  - Rachid replaced ROC#6 with ROC#18 for RC-0S, so no problem already (as long as ROC#18 has no issue.)

Extra Sildes

- Run-by-run dependence of hot/cold maps
  - This instability is nothing to do with the ROC instability but the other cause.
  - DAC values are same for analyzed runs
  - The condition of Jaein's analysis:
    - Hot channel > mean+3σ, Cold channel < mean-3σ



Red: Hot
Cyan: Cold



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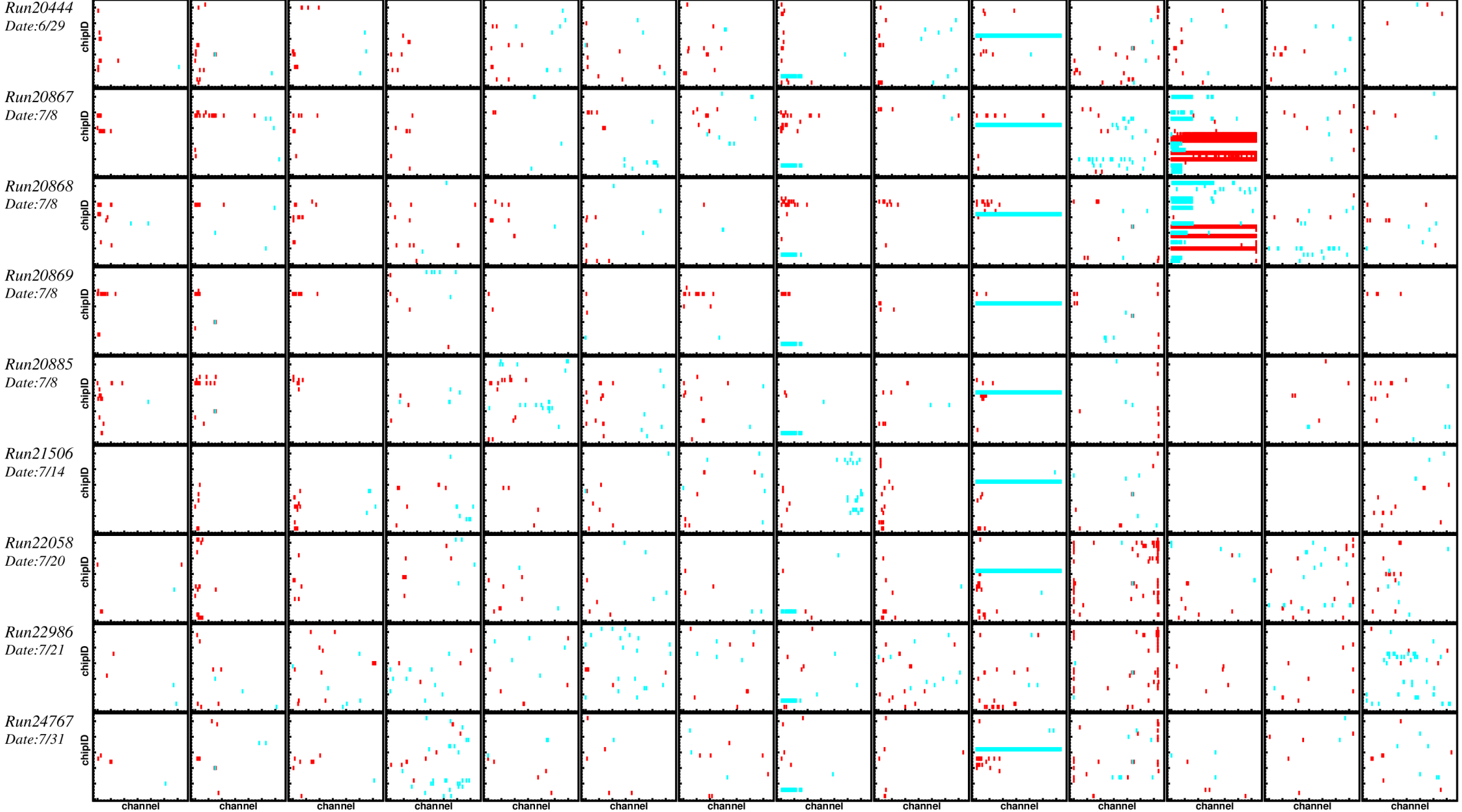
Cyan: Cold



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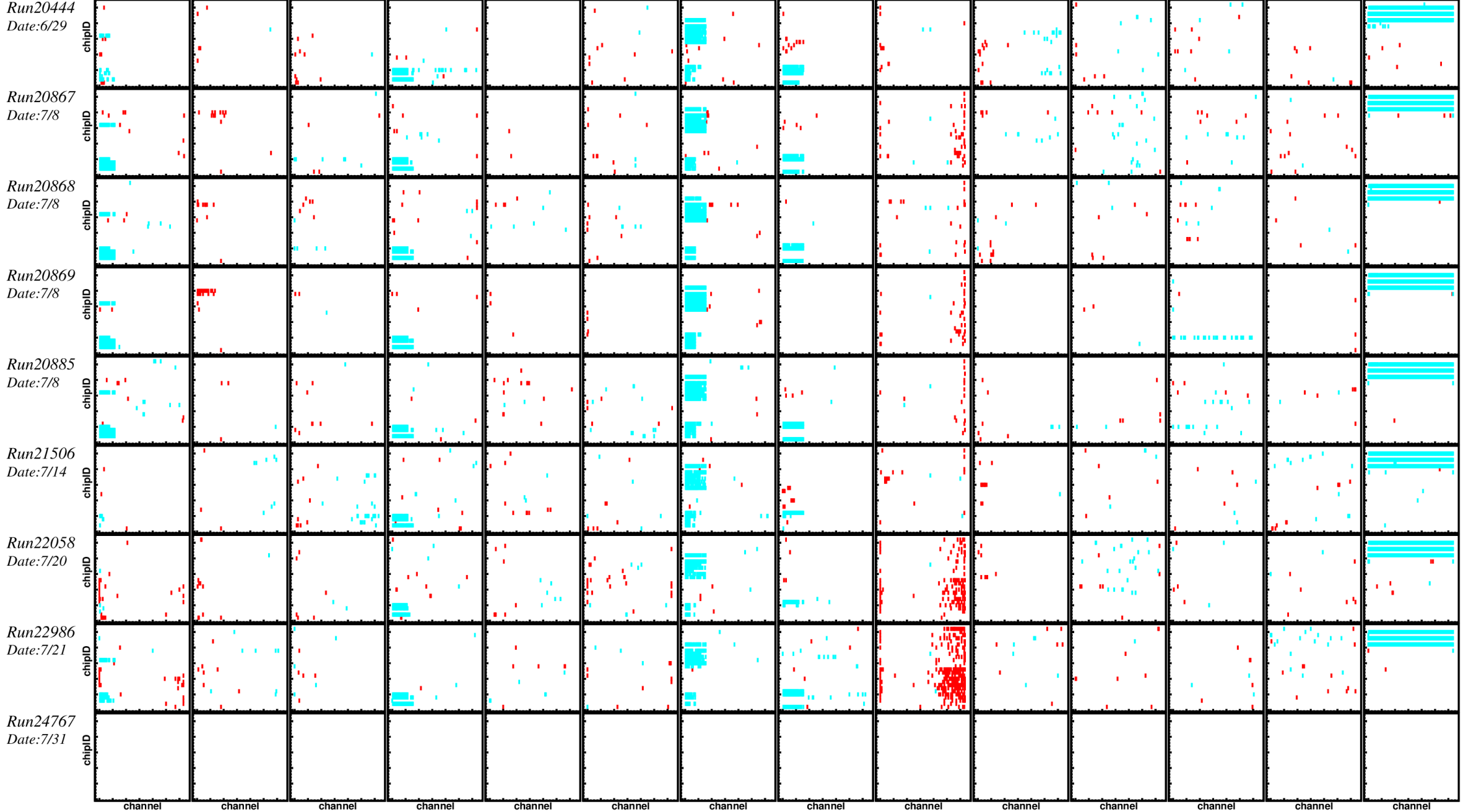

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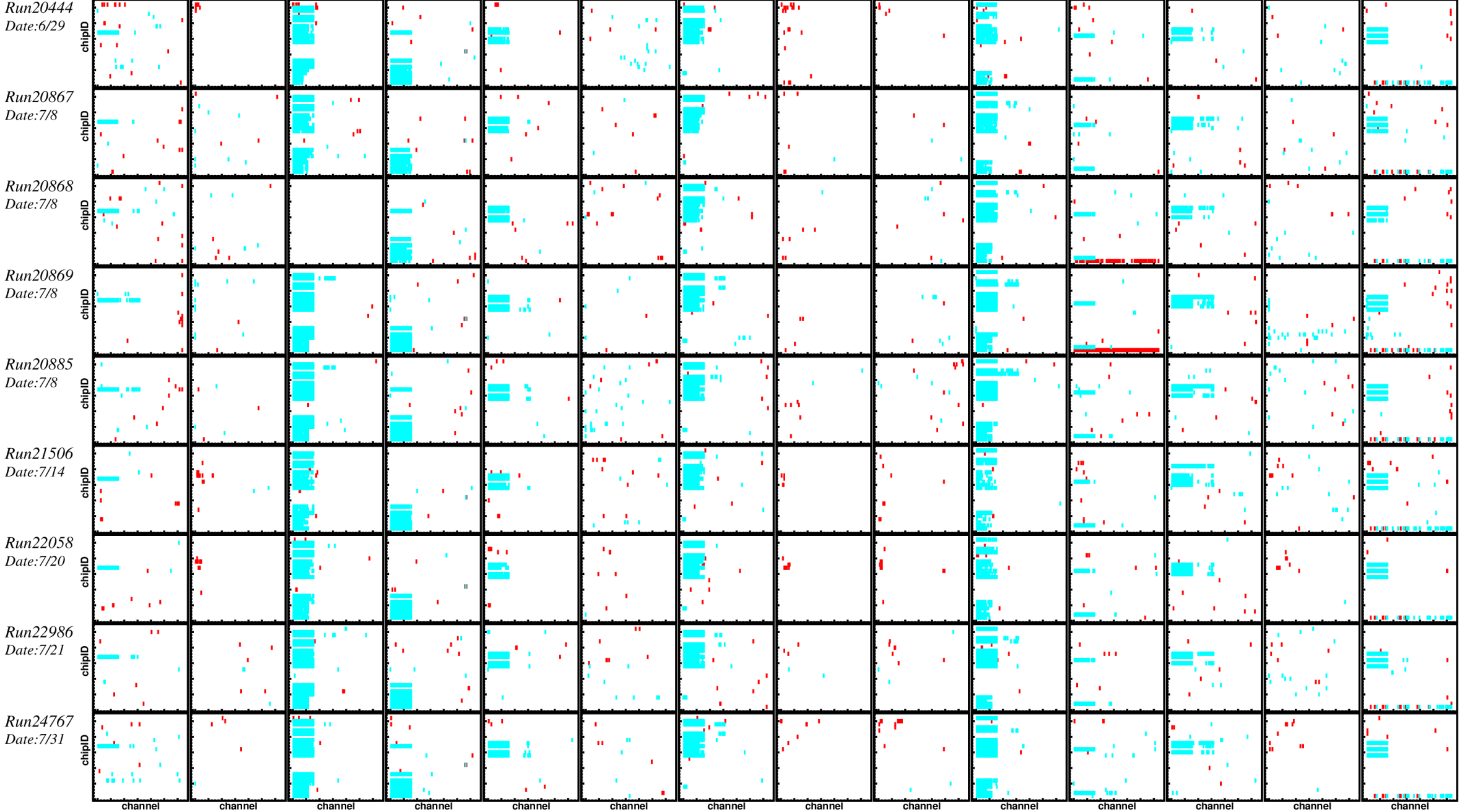

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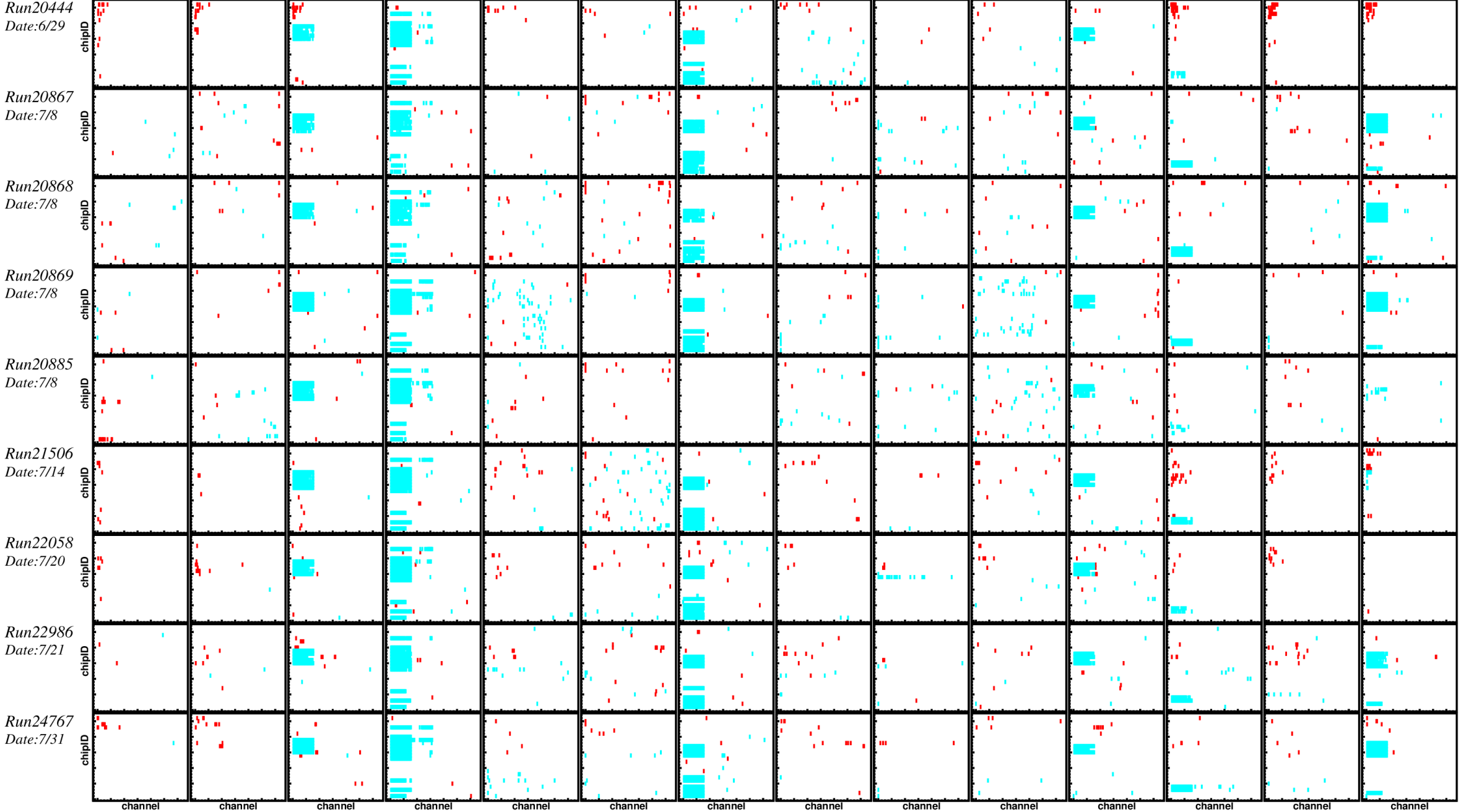

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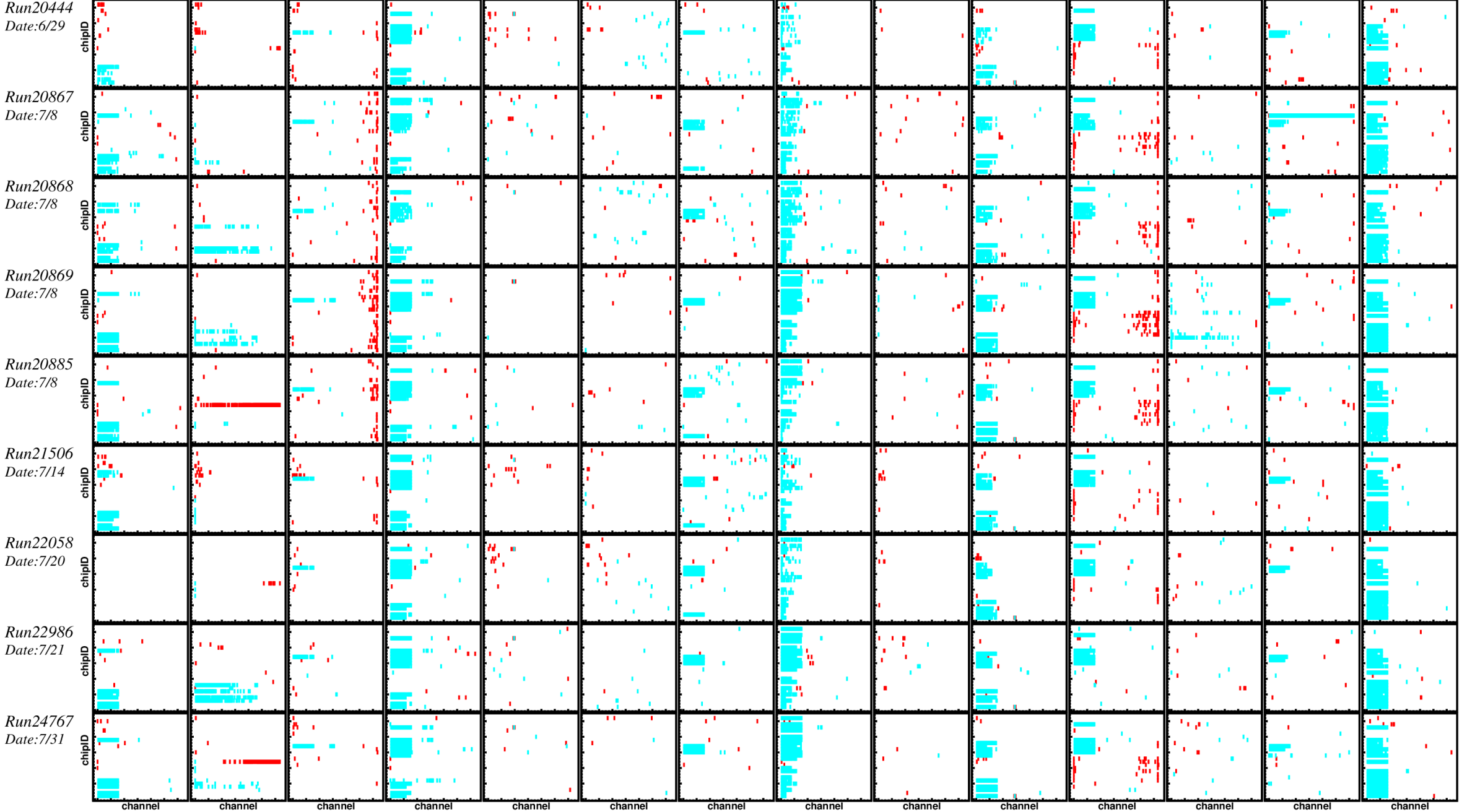

Red: Hot

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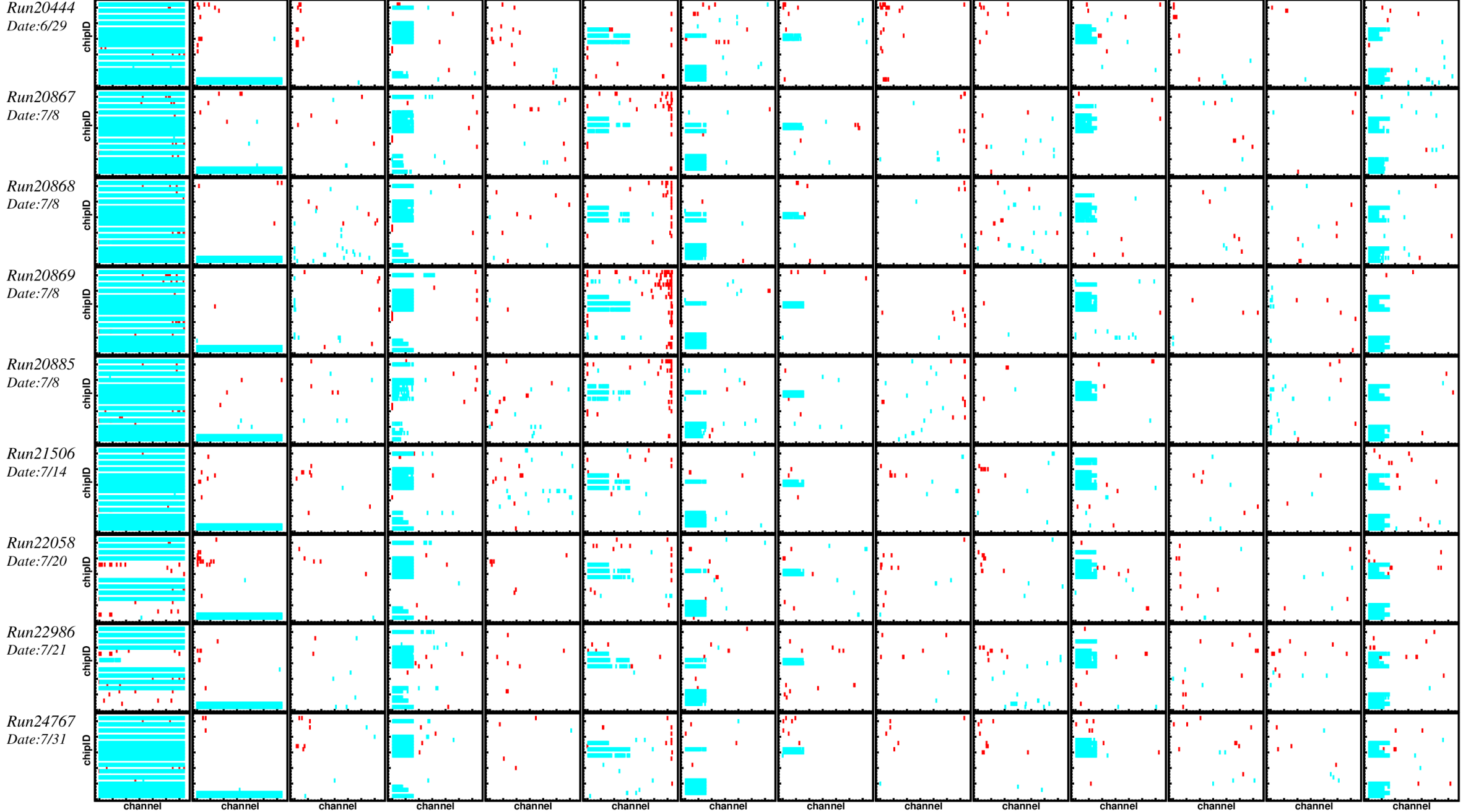

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