

```
% cat routes.run1/adv/austr.816272165.2
```

```
traceroute to 128.250.1.6 (128.250.1.6), 30 hops max, 40 byte packets
```

```
 1 199.222.103.254  2.402 ms  2.249 ms  2.193 ms
 2 199.222.77.65   6.151 ms  5.254 ms  5.202 ms
 3 140.222.32.222  5.363 ms  4.782 ms  5.367 ms
 4 140.222.48.1   7.825 ms 13.046 ms 11.847 ms
 5 140.222.43.3   25.706 ms 24.221 ms 22.761 ms
 6 140.222.27.3   31.929 ms 32.24 ms  32.028 ms
 7 140.222.96.2   56.147 ms 58.656 ms 54.666 ms
 8 140.222.8.2    81.319 ms 79.227 ms 78.895 ms
 9 140.222.144.1  80.707 ms 81.526 ms 80.116 ms
10 192.203.230.18 83.71 ms  82.824 ms 90.805 ms
11 204.70.158.117 85.151 ms 86.547 ms 83.324 ms
12 204.70.3.163   86.729 ms 84.226 ms 85.824 ms
13 204.70.35.6    270.851 ms 261.565 ms 271.259 ms
14 139.130.29.1   269.34 ms 268.082 ms 265.864 ms
15 192.43.209.2   276.722 ms 267.224 ms 264.602 ms
16 128.250.3.8    273.766 ms 267.964 ms 263.465 ms
17 128.250.29.2   272.097 ms 268.233 ms 266.605 ms
18 128.250.1.6    266.618 ms 265.447 ms 268.45 ms
```

```
% □
```

```
% cat routes.run1/austr2/austr.815920012.2
```

```
traceroute to mullala.cs.mu.oz.au (128.250.1.6) 30 hops max, 40 byte packets
```

```
 1 134.148.96.250  3 ms  2 ms  1 ms
 2 134.148.2.1    2 ms  2 ms  2 ms
 3 134.148.24.251 2 ms  2 ms  2 ms
 4 139.130.80.1   680 ms 532 ms 435 ms
 5 139.130.188.66 667 ms 853 ms 617 ms
 6 192.43.209.7   547 ms 505 ms 434 ms
 7 128.250.3.8    267 ms 405 ms 518 ms
 8 128.250.29.2   483 ms 401 ms 512 ms
 9 128.250.1.6    288 ms 830 ms 691 ms
```

```
% □
```

```
# parse: first line, blank line; either order
/^(traceroute to [^ ]* \([0-9.]*\), * 30 hops max, 40 byte packets$)/
```

```
# parse: first line, blank line; either order
/^traceroute to [^ ]* \([0-9.*\),* 30 hops max, 40 byte packets$/
```

28,162 measurements of some sort

- 77 unknown host

 - no real predominant pattern

- 10 could not exec

 - predominantly UCL

- 1 libc not found

given those failures, That's It

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```
28,162 measurements of some sort
    77 unknown host
        no real predominant pattern
    10 could not exec
        predominantly UCL
    1 libc not found
    # given those failures, That's It
```

```
28,074 non-failed measurements
# always started at line 3; always had hop = line - 2
# always had 3 entries per line
# set of considerations below fully parsed each hop - no others
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```

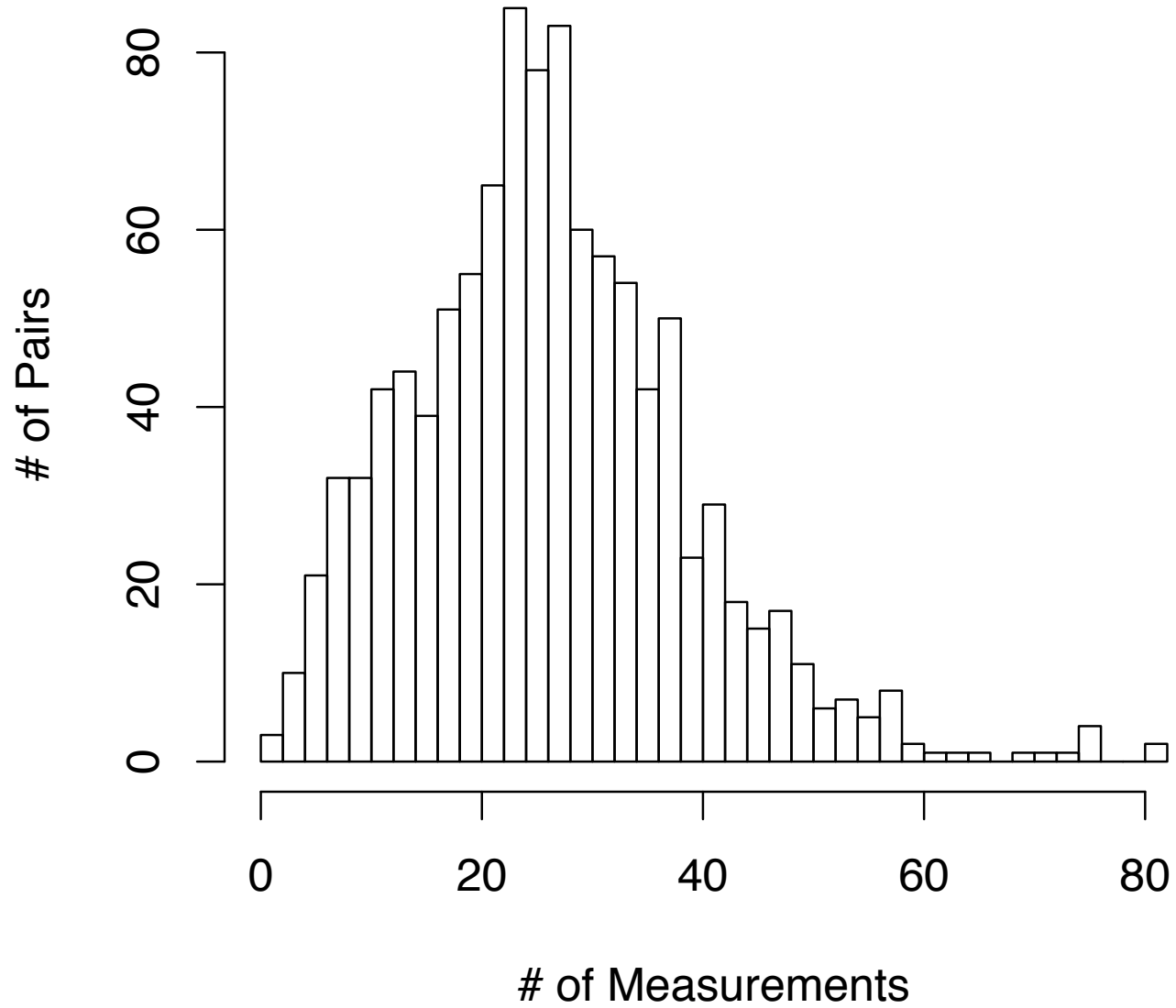
```
33 end systems
```

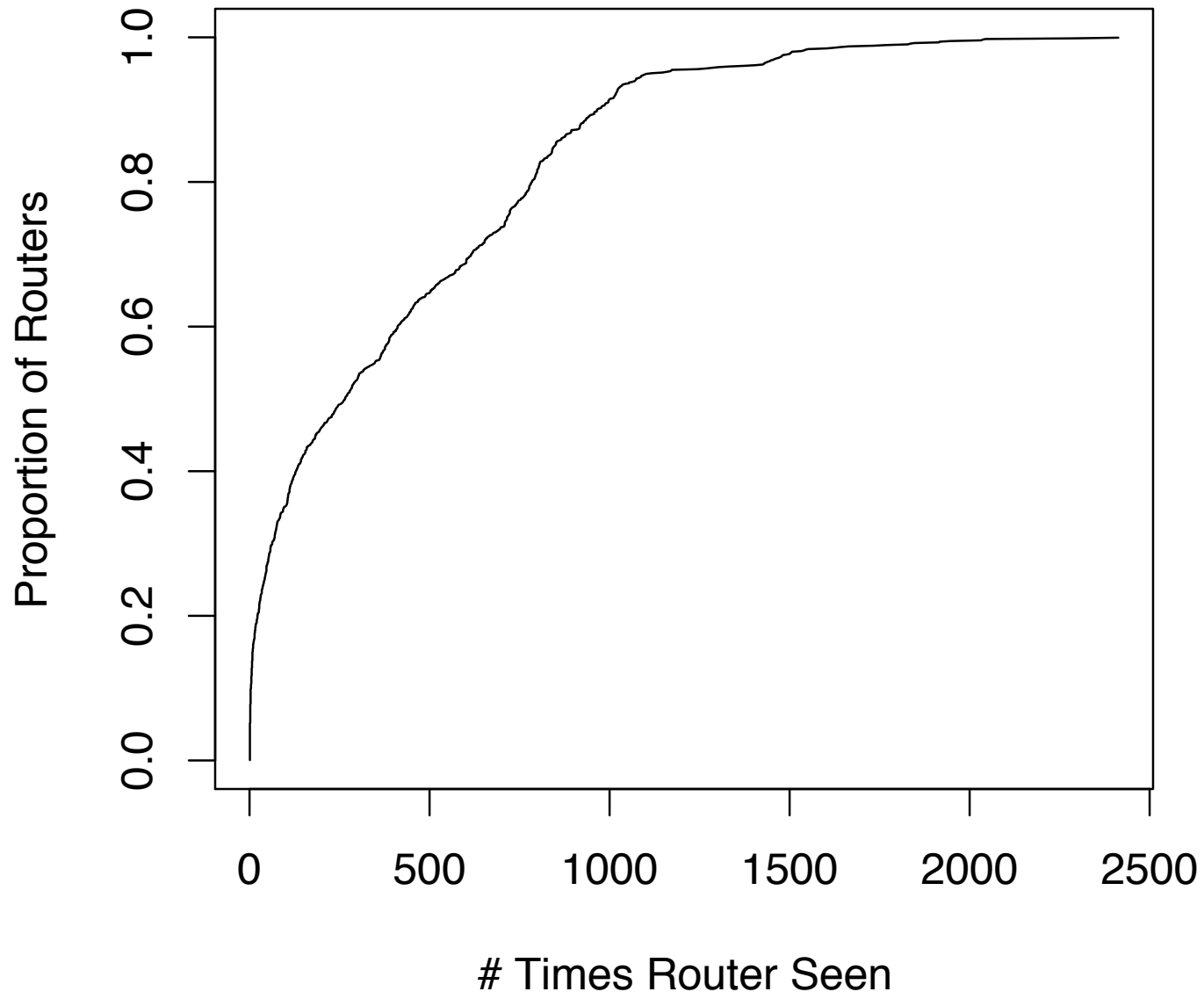
```
257-1,081 per-measurement-sources (panix -> lbl)
    avg 851, median 883
    all but 3 > 600
```

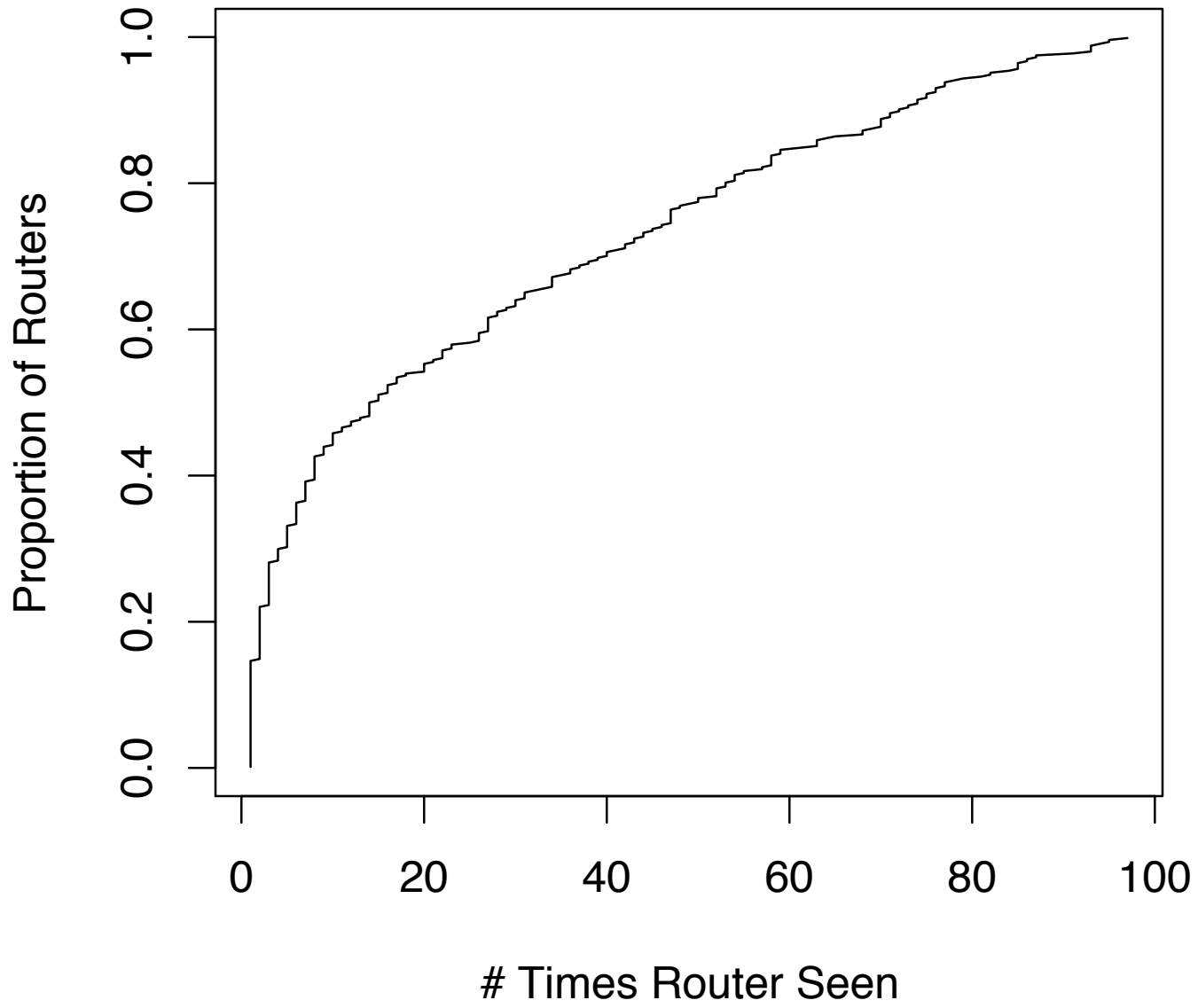
```
406-1,056 per-measurements-dsts (ukc -> connix)
```

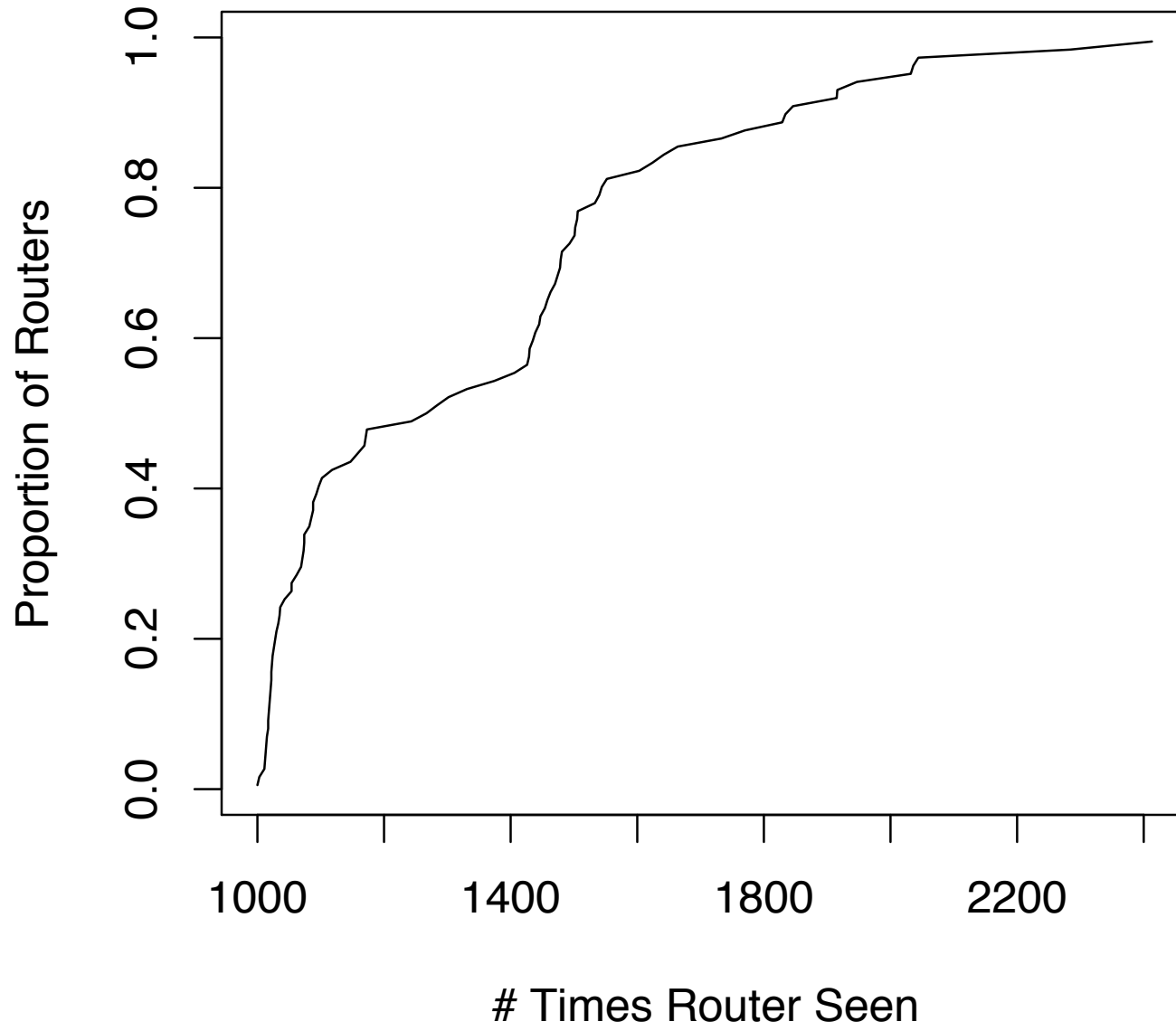
```
1-82 per-measurement-pairs
    1056 pairs - this is the entire set
```

Histogram of Traceroute Measurement Pairs









```
% cat routes.run1/adv/austr.816272165.2
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```
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1 199.222.103.254 2.402 ms 2.249 ms 2.193 ms
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```
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```

```
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```

```
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```
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```

```
6 140.222.27.3 31.929 ms 32.24 ms 32.028 ms
```

```
7 140.222.96.2 56.147 ms 58.656 ms 54.666 ms
```

```
routes.run1/adv/austr.816272165.2 128.250.1.6 18 - 128.250.1.6 277-max-time 268-last-  
max 2-min-time 0-repeated-hops 0-repeated-routers 0-multiple-routers 0-missing-hops 0  
-all-missing 0-host-unreach 0-net-unreach 0-ttl-mismatch
```

```
10 192.203.230.18 83.71 ms 82.824 ms 90.805 ms
```

```
11 204.70.158.117 85.151 ms 86.547 ms 83.324 ms
```

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12 204.70.3.163 86.729 ms 84.226 ms 85.824 ms
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```
14 139.130.29.1 269.34 ms 268.082 ms 265.864 ms
```

```
15 192.43.209.2 276.722 ms 267.224 ms 264.602 ms
```

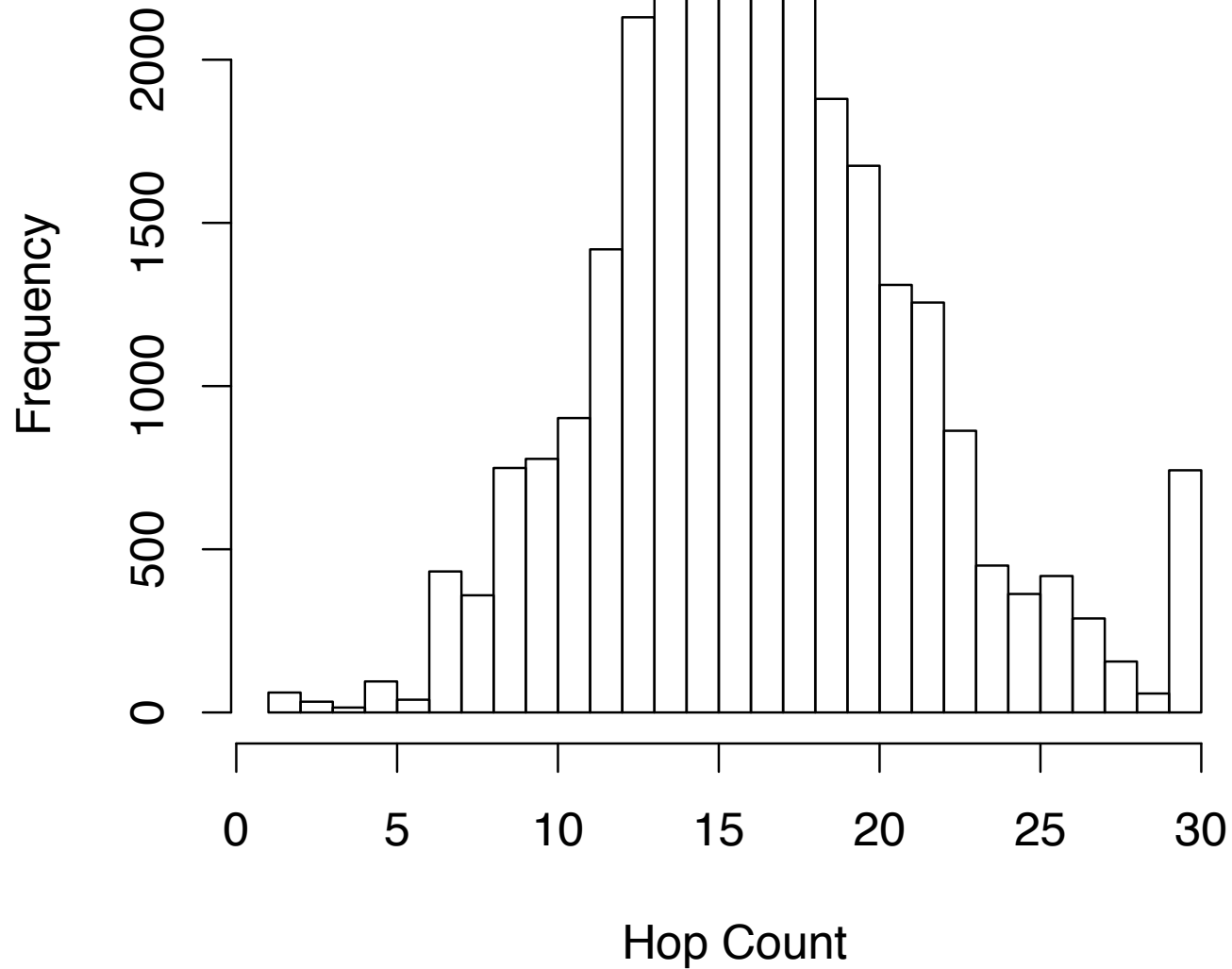
```
16 128.250.3.8 273.766 ms 267.964 ms 263.465 ms
```

```
17 128.250.29.2 272.097 ms 268.233 ms 266.605 ms
```

```
18 128.250.1.6 266.618 ms 265.447 ms 268.45 ms
```

```
% □
```

Histogram of Traceroute Hopcounts



```
% cat routes.run3/sdsc/ncar.817320000.1  
traceroute to mbone.ucar.edu (192.52.106.7), 30 hops max, 40 byte packets
```

```
 1 198.17.46.41 16 ms !H 13 ms !H 13 ms !H
```

```
% □
```

```
% cat routes.run3/sdsc/ncar.817320000.1
traceroute to mbone.ucar.edu (192.52.106.7), 30 hops max, 40 byte packets
```

```
 1 198.17.46.41 16 ms !H 13 ms !H 13 ms !H
% □
```

```
% cat routes.run1/sintef1/sintef2.815572479.1
traceroute to stork.runit.sintef.no (129.241.1.88), 30 hops max, 40 byte packets
```

```
 1 129.241.100.1 1.751 ms 1.547 ms 1.978 ms
 2 129.241.1.88 2.873 ms 1.694 ms 1.755 ms
% □
```

```
% cat routes.run3/sdsc/ncar.817320000.1
traceroute to mbone.ucar.edu (192.52.106.7), 30 hops max, 40 byte packets
```

```
 1 198.17.46.41 16 ms !H 13 ms !H 13 ms !H
% □
```

```
% cat routes.run1/sintef1/sintef2.815572479.1
traceroute to stork.runit.sintef.no (129.241.1.88), 30 hops max, 40 byte packets
```

```
 1 129.241.100.1 1.751 ms 1.547 ms 1.978 ms
 2 129.241.1.88 2.873 ms 1.694 ms 1.755 ms
% □
```

```
% cat routes.run1/ncar/sdsc.816099373.1
traceroute to 198.17.46.57 (198.17.46.57), 30 hops max, 40 byte packets
```

```
 1 192.52.106.102 3 ms 2 ms 2 ms
 2 204.147.129.61 41 ms 39 ms 39 ms
 3 198.17.46.57 45 ms 44 ms 47 ms
% □
```

```
% more routes.run2/harv/inria.816638420.2
```

```
traceroute to tom.inria.fr (138.96.24.81), 30 hops max, 40 byte packets
```

```
 1 140.247.60.1  2 ms  1 ms  2 ms
 2 140.247.5.1  3 ms  2 ms  1 ms
 3 140.247.20.1 2 ms  2 ms  1 ms
 4 192.54.223.21 3 ms  3 ms  9 ms
 5 131.192.5.2  8 ms  7 ms  4 ms
 6 199.94.217.1 5 ms  3 ms  3 ms
 7 192.233.149.202 3 ms  4 ms  5 ms
 8 192.233.33.11 4 ms  3 ms  6 ms
 9 204.70.20.5  75 ms 12 ms 207 ms
10 204.70.2.33  6 ms  6 ms 10 ms
11 204.70.1.1  13 ms 16 ms 11 ms
12 204.70.1.5  25 ms 20 ms 17 ms
13 204.70.3.4  16 ms 15 ms 17 ms
14 204.70.74.118 20 ms 17 ms 19 ms
15 192.41.177.240 80 ms 162 ms 106 ms
16 198.67.131.10 20 ms 26 ms 18 ms
17 198.67.131.34 20 ms 20 ms 20 ms
18 192.157.65.130 123 ms 225 ms 151 ms
19 192.121.156.73 190 ms 143 ms 325 ms
20 192.93.43.169 197 ms 167 ms 169 ms
21 192.93.43.18 192 ms 242 ms 204 ms
22 192.93.43.89 183 ms 140 ms 158 ms
23 * 192.93.43.73 203 ms 241 ms
24 * 192.93.43.49 229 ms *
25 193.48.50.33 256 ms 296 ms 204 ms
26 193.48.50.50 191 ms 233 ms 180 ms
27 193.48.50.170 204 ms 213 ms 185 ms
28 193.51.208.1 177 ms * 172 ms
29 138.96.64.250 180 ms 175 ms 174 ms
30 * 138.96.24.81 161 ms *
```

```
% □
```



```
% cat routes.run1/adv/ucl.815872105.1
```

```
traceroute to boom.cs.ucl.ac.uk (128.16.64.13), 30 hops max, 40 byte packets
```

```
 1 199.222.103.254  2.554 ms  2.219 ms  2.24 ms
 2 199.222.77.65   6.266 ms  5.342 ms  5.176 ms
 3 140.222.32.222  5.235 ms  8.074 ms  4.854 ms
 4 140.222.218.1  10.262 ms 10.767 ms 10.622 ms
 5 192.157.69.11  14.102 ms 11.887 ms 12.94 ms
 6 204.70.45.5    20.124 ms 15.844 ms 18.07 ms
 7 204.70.3.17   21.034 ms 16.282 ms 19.829 ms
 8 204.70.2.18   16.544 ms 16.694 ms 18.503 ms
 9 * 204.70.44.10 181.982 ms 166.16 ms
10 * * *
11 * * *
12 * * *
13 * * *
14 * * *
15 * * *
16 * * *
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24 * * *
25 * * *
26 * * *
27 * * *
28 * * *
29 * * *
30 * * *
```

```
% █
```

```
% cat routes.run6/ustutt/ucol.819451502.2
```

```
traceroute to foobar.cs.colorado.edu (128.138.241.36), 30 hops max, 40 byte packets
```

```
 1 129.69.210.254  5 ms  4 ms  4 ms
 2 129.69.205.10  3 ms  3 ms  4 ms
 3 129.69.18.110  4 ms  4 ms  4 ms
 4 129.143.70.1   4 ms  4 ms  6 ms
 5 153.17.200.68 16 ms 24 ms 15 ms
 6 193.174.74.200 17 ms 22 ms 17 ms
 7 204.70.67.45  193 ms 206 ms 195 ms
 8 204.70.64.20  191 ms * 190 ms
 9 * 204.70.64.49 194 ms *
10 204.70.1.109  230 ms 231 ms *
11 204.70.3.114  236 ms 255 ms *
12 * * 204.70.29.6 275 ms
13 * * 192.52.106.4 241 ms
14 * 204.131.58.9 239 ms *
15 * 128.138.138.30 270 ms !H *
16 128.138.138.30 278 ms !H * *
17 * 128.138.138.30 305 ms !H *
18 * * *
19 * * 128.138.138.30 284 ms !H
20 * 128.138.138.30 388 ms !H *
21 * * *
22 * * *
23 * 128.138.138.30 279 ms !H *
24 * * *
25 * 128.138.138.30 316 ms !H *
26 128.138.138.30 254 ms !H * *
27 128.138.138.30 295 ms !H * *
28 * * *
29 * 128.138.138.30 249 ms !H *
30 * 128.138.138.30 274 ms !H *
```

```
% □
```

```
% cat routes.run1/adv/inria.815661952.2
traceroute to tom.inria.fr (138.96.24.81), 30 hops max, 40 byte packets
```

```
 1 199.222.103.254  2.194 ms  2.205 ms  2.169 ms
 2 199.222.77.65   179.726 ms  7.599 ms  203.475 ms
 3 140.222.32.222  204.145 ms  4.623 ms  4.645 ms
 4 140.222.56.2   10.178 ms  10.151 ms  10.674 ms
 5 140.222.147.1  11.225 ms  10.626 ms  11.153 ms
 6 192.41.177.240 15.419 ms  107.846 ms 101.702 ms
 7 * * *
 8 * * *
 9 * * *
10 * * *
11 * * *
12 * * *
13 * * *
14 * * *
15 * * *
16 * * *
17 * * *
18 * * *
19 * * *
20 * * *
21 * * *
22 * * *
23 * * *
24 * * *
25 * * *
26 * * *
27 * * 192.157.69.30 371.418 ms
28 198.67.131.26 420.621 ms * *
29 * 194.72.24.1 262.235 ms 294.113 ms
30 194.72.24.2 358.794 ms * *
```

```
% □
```

```
% cat routes.run1/austr/nrao.816452759.2
```

```
traceroute to fits.cv.nrao.edu (192.33.115.8), 30 hops max, 40 byte packets
```

```
 1 128.250.1.1  3 ms  4 ms  3 ms
 2 128.250.29.1 116 ms 3 ms  4 ms
 3 128.250.3.2  6 ms  3 ms 10 ms
 4 192.43.209.1 14 ms  7 ms  5 ms
 5 139.130.240.2 123 ms 7 ms 200 ms
 6 204.70.35.5  191 ms 190 ms 188 ms
 7 204.70.3.161 275 ms 233 ms 263 ms
 8 204.70.1.154 216 ms 223 ms 211 ms
 9 204.70.1.178 279 ms 289 ms 281 ms
10 204.70.2.2  283 ms 281 ms 283 ms
11 204.70.56.6  284 ms 283 ms 279 ms
12 128.167.7.8  281 ms 279 ms 285 ms
13 * 128.167.3.2 333 ms 293 ms
14 192.221.3.18 291 ms 128.167.212.2 287 ms 284 ms
15 128.167.212.1 289 ms 287 ms 517 ms
16 128.167.212.2 387 ms 292 ms 476 ms
17 128.167.252.9 454 ms 463 ms 281 ms
18 128.167.252.8 471 ms 413 ms 454 ms
19 128.167.252.9 327 ms 435 ms 485 ms
20 128.167.252.8 348 ms 456 ms 517 ms
21 128.167.252.9 302 ms 295 ms 283 ms
22 * 128.167.252.8 425 ms 533 ms
23 128.167.252.9 280 ms 389 ms 331 ms
24 128.167.252.8 320 ms 360 ms *
25 128.167.252.9 283 ms 280 ms 297 ms
26 128.167.252.8 533 ms 503 ms 433 ms
27 128.167.252.9 291 ms 295 ms 294 ms
28 128.167.252.8 489 ms 497 ms 486 ms
29 128.167.252.9 285 ms 290 ms 299 ms
30 * 128.167.252.8 354 ms 293 ms
```

```
% □
```