Characterization of 1827 and AZ 4620 Photoresist Profiles

- Goal: To achieve >87 deg Sidewalls
- Conditions: 12.1 mW/cm² at 436 nm
- Using an MA-6 Suss Mask Aligner
- All soft bakes at 115°C for 2 min, on a hot plate
Resist: 1827 Hard Contact
Soft bake: 2 min at 115°C
Spread 1 sec 500 RPM, 30 sec 3000 RPM
Exposure time: 20 sec
Hard bake: 2 min, 115°C

Develop: ?
Angle: N/A
Imaged: Feb. 20, 2023
Resist: 1827 Hard Contact
Soft bake: 2 min at 115°C
Spread 1 sec 500 RPM, 30 sec 3000 RPM
Exposure time: 20 sec
Hard bake: None

Develop: ?
Angle: 62.2°
Imaged: Feb. 21, 2023
Resist: 1827 Hard Contact
Soft bake: 2 min at 115°C
Spread 1 sec 500 RPM, 30 sec 3000 RPM
Exposure time: 20 sec
Hard bake: Overnight at vacuum, 90°C

Develop: ?
Angle: 62.0°
Imaged: 2/22/2023
Resist: 1827 Hard Contact – Over expose
Soft bake: 2 min at 115°C
Spread 1 sec 500 RPM, 30 sec 3000 RPM
Exposure time: 24 sec
Hard bake: None

Develop: ?
Angle: 65.0°
Imaged: 2/22/2023
Resist: 1827 Direct write
Soft bake: 2 min at 115°C
Spread 1 sec 500 RPM, 30 sec 3000 RPM
Exposure time: N/A
Hard bake: None

Develop: ?
Angle: 63.5°
Imaged: 2/22/2023
Resist: 1827 Hard Contact – Fresh resist from freezer
Soft bake: 2 min at 115°C
Spread 1 sec 500 RPM, 30 sec 3000 RPM
Exposure time: 20 sec
Hard bake: None

Develop: ?
Angle: 63.2°
Imaged: 2/22/2023
Resist: 1827 Hard Contact – Image Reversal
Soft bake: 2 min at 115°C
Spread 1 sec 500 RPM, 30 sec 3000 RPM
Exposure time: 20 sec
No Hard bake

Flood E.: 30 sec,
Develop: 2 min
Angle is 80 - 106°
Imaged Feb 24, 2023
Resist: 1827 Hard Contact – Image Reversal
Soft bake: 2 min at 115°C
Spread 1 sec 500 RPM, 30 sec 3000 RPM
Exposure time: 20 sec
No Hard bake

Flood E.: 40 sec
Develop: 2 min
Angle is 86 - 95°
Imaged Feb 24, 2023
Resist: 1827 Hard Contact – Image Reversal
Soft bake: 2 min at 115°C
Spread 1 sec 500 RPM, 30 sec 3000 RPM
Exposure time: 20 sec
No Hard bake

Flood E.: 40 sec
Develop: 3 min
Angle: 105, 106°
Imaged Feb, 24 2023
Resist: 1827 Hard Contact – Image Reversal
Soft bake: 2 min at 115°C
Spread 1 sec 500 RPM, 30 sec 3000 RPM
Exposure time: 20 sec
No Hard bake

Flood E.: 60 sec
Develop: 3 min
Angle: 103.3, 101.7°
Imaged: March, 3 2023
Resist: 1827 Hard Contact – Image Reversal
Soft bake: 2 min at 115°C
Spread 1 sec 500 RPM, 30 sec 3000 RPM
Exposure time: 20 sec
No Hard bake

Flood E.: 60 sec
Develop: 4 min
Angle: 102.9, 92.6, 96.7, 92.1, 94.4, 94.9, 93.7
Imaged: Mach 2 and 10, 2023
Resist: 1827 Hard Contact – Image Reversal
Soft bake: 2 min at 115°C
Spread 1 sec 500 RPM, 30 sec 3000 RPM
Exposure time: 20 sec
No Hard bake

Flood E.: 60 sec
Develop: **5 min**
Angle: 99.7°, 101.4, 96.7, 101.5, 98.4, 92.9
Imaged: March, 2 2023
Resist: 1827 Hard Contact – Image Reversal
Soft bake: 2 min at 115°C
Spread 1 sec 500 RPM, 30 sec 3000 RPM
Exposure time: 20 sec
No Hard bake

Flood E.: 60 sec
Develop: 1:40 min
Angle: 86.0, 94.2, 93.8
Imaged: Feb., 27 2023
Resist: 1827 Hard Contact - Image Reversal
Soft bake: 2 min at 115°C
Spread 1 sec 500 RPM, 30 sec 3000 RPM
Exposure time: 20 sec
No Hard bake
Reactive Ion etch in O₂ 30 sec?

Flood E.: 60 sec
Develop: 4 min
Angle: 98.3
Imaged: March, 3 2023
Resist: 1827 Hard Contact - Image Reversal
Soft bake: 2 min at 115°C
Spread 1 sec 500 RPM, 30 sec 3000 RPM
Exposure time: 20 sec
Hard bake: 90° Vacuum oven

Flood E.: 90 sec
Develop: 3 min
Angle: N/A
Imaged: March, 3 2023
Resist: 1827 Hard Contact - Image Reversal
Soft bake: 2 min at 115°C
Spread 1 sec 500 RPM, 30 sec 3000 RPM
Exposure time: 20 sec
Hard bake: None

Flood E.: 90 sec
Develop: 3 min
Angle: N/A
Imaged: March, 3 2023
Resist: 1827 Hard Contact - Image Reversal
Soft bake: 2 min at 115°C
Spread 1 sec 500 RPM, 30 sec 3000 RPM
Exposure time: 20 sec
Hard bake: None

Flood E.: 60 sec
Develop: 4 min
Angle: 92.6, 96.7, 92.1, 94.4, 94.9, 93.7
Imaged: March, 10 2023
Resist: 1827 Hard Contact - Image Reversal
Soft bake: 2 min at 115°C
Spread 1 sec 500 RPM, 30 sec 3000 RPM
Exposure time: 20 sec
Hard bake: None

Flood E.: 60 sec
Develop: 4 min
Angle: 103.2, 100.9, 105.5, 106.9
Imaged: March, 9 2023
Plasma Ash: 1min
Resist: 1827 Hard Contact - Image Reversal
Soft bake: 2 min at 115°C
Spread 1 sec 500 RPM, 30 sec 3000 RPM
Exposure time: 20 sec
Hard bake: None

Flood E.: **60 sec**
Develop: **4 min**
Angle: 96.1, 93.7, 96.7, 93.7, 97.2, 99.0, 99.4, 97.1, 95.0, 95.7
Imaged: March, 10 2023
Plasma Ash: 1min 20 sec
Resist: 1827 Vac Contact
Soft bake: 2 min at 115°C
Spread 1 sec 500 RPM, 30 sec 3000 RPM
Exposure time: 18 sec
Hard bake: None

Develop: **2 min**
Angle: 86.6, 85.0, 86.0, 80.9, 79.7, 84.5, 88.5, 83.3, 82.5, 83.7, 84.6, 83.6
Imaged: March, 15 2023
Resist: 1827 Vac Contact
Soft bake: 2 min at 115°C
Spread 1 sec 500 RPM, 30 sec 3000 RPM
Exposure time: 20 sec
Hard bake: None

Develop: 2 min
Angle: 82.1, 80.4, 81.7, 80.5, 82.3, 80.8, 81.1
Imaged: March, 15 2023
Resist: 1827 Vac Contact
Soft bake: 2 min at 115°C
Spread 1 sec 500 RPM, 30 sec 3000 RPM
Exposure time: 22 sec
Hard bake: None

Develop: **1:30 min**
Angle: 71.6, 78.2, 77.0, 72.1, 74.8, 74.1
Imaged: March, 15 2023
Resist: 1827 Hard Contact - Image reversal to reproduce previous results
Soft bake: 2 min at 115°C
Spread 1 sec 500 RPM, 30 sec 3000 RPM
Exposure time: 20 sec
Hard bake: None

Flood E.: 60 sec
Develop: 4 min
Angle: 109.1, 109.0, 108.7, 106.7, 113.1, 110.3, 110.2
Imaged: March, 16 2023
Resist: 1827 Image reversal to reproduce previous results
Soft bake: 2 min at 115°C
Spread 1 sec 500 RPM, 30 sec 3000 RPM
Exposure time: 20 sec
Hard bake: None

Flood E.: 60 sec
Develop: 5 min
Imaged: March, 16 2023
Resist: 1827 Vacuum Contact Image
Reversal
Soft bake: 2 min at 115°C
Spread 1 sec 500 RPM, 30 sec 3000 RPM
Exposure time: 20 sec
Hard bake: None

Flood E.: 60 sec
Develop: 1 min
Angle: 89.94±1.01 (n=16)
Imaged: March, 16 2023
Resist: 1827 Vacuum Contact Image
Reversal
Soft bake: 2 min at 115°C
Spread 1 sec 500 RPM, 30 sec 3000 RPM
Exposure time: 20 sec
Hard bake: Image reversal oven 24 hrs 90°C

Flood E.: 60 sec
Develop: 1 min
Angle: 89.56±1.24 (n=17)
Imaged: March 16, 2023
Resist: 1827 Vacuum Contact Image
Reversal
Soft bake: 1 min at 115°C
Spread 1 sec 500 RPM, 30 sec 4000 RPM
Exposure time: 20 sec
Hard bake: 12hr Vacuum Bake 100°C

Flood E.: NA
Develop: 1 min
Angle: Some areas melted
Imaged: March, 23 2023
Resist: 1827 Vacuum Contact Vapor
Prime
Soft bake: 1 min at 115°C
Spread 1 sec 500 RPM, 30 sec 4000 RPM
Exposure time: 14 sec
Hard bake: None

Flood E.: NA
Develop: 1 min
Angle: 69.7±1.35 (n=12)
Imaged: March, 27 2023
Resist: 1827 Vacuum Contact Vapor
Prime
Soft bake: 1 min at 115°C
Spread 1 sec 500 RPM, 30 sec 4000 RPM
Exposure time: 16 sec
Hard bake: None

Flood E.: NA
Develop: 1 min
Angle: 79.44±1.45 (n=18)
Imaged: March 27, 2023
Resist: 1827 Vacuum Contact Vapor
Prime
Soft bake: 1 min at 115°C
Spread 1 sec 500 RPM, 30 sec 4000 RPM
Exposure time: 18 sec
Hard bake: None

Flood E.: NA
Develop: 1 min
Angle: 83.22±1.18 (n=6)
Imaged: March 27, 2023
Resist: 1827 Vacuum Contact Vapor Prime
Soft bake: 1 min at 115°C
Spread 1 sec 500 RPM, 30 sec 4000 RPM
Exposure time: 20 sec
Hard bake: None

Flood E.: NA
Develop: 1 min
Angle: 79.0° ± 1.61 (n=11)
Imaged: March 27 2023
Resist: 1827 Vacuum Contact **Spin Prime**
Soft bake: 1 min at 115°C
Spread 1 sec 500 RPM, 30 sec 4000 RPM
Exposure time: 14 sec
Hard bake: None

Flood E.: NA
Develop: 1 min
Angle: 66.05±2.99 (n=12)
Imaged: March 27, 2023
Resist: 1827 Vacuum Contact **Spin Prime**
Soft bake: 1 min at 115°C
Spread 1 sec 500 RPM, 30 sec 4000 RPM
Exposure time: 16 sec
Hard bake: None

Flood E.: NA
Develop: 1 min
Angle: 77.42±2.31 (n=15)
Imaged: March 28, 2023
Resist: 1827 Vacuum Contact **Spin Prime**
Soft bake: 1 min at 115°C
Spread 1 sec 500 RPM, 30 sec 4000 RPM
Exposure time: 18 sec
Hard bake: None

Flood E.: NA
Develop: 1 min
Angle: 77.31±1.70 (n=16)
Imaged: March 28, 2023
Resist: 1827 Vacuum Contact **Spin Prime**
Soft bake: 1 min at 115°C
Spread 1 sec 500 RPM, 30 sec 4000 RPM
Exposure time: 20 sec
Hard bake: None

Flood E.: NA
Develop: 1 min
Angle: 84.0±1.07 (n=12)
Imaged: March, 27 2023
Resist: 1827 Vacuum Contact **Vac Prime**
Image Reversal
Soft bake: 1 min at 115°C
Spread 1 sec 500 RPM, 30 sec 4000 RPM
Exposure time: 14 sec
Hard bake: None

Flood E.: 60 sec
Develop: 1 min ?
Angle: 101.87±2.75 (n=14)
Imaged: March, 28 2023
Resist: 1827 Vacuum Contact \textbf{Vac Prime}

Image Reversal

Soft bake: 1 min at 115°C

Spread 1 sec 500 RPM, 30 sec 4000 RPM

Exposure time: 16 sec

Hard bake: None

Flood E.: 60 sec

Develop: 1 min ?

Angle: 96.79±3.5 (n=20)

Imaged: March 28, 2023
Resist: 1827 Vacuum Contact **Vac Prime**
Image Reversal
Soft bake: 1 min at 115°C
Spread 1 sec 500 RPM, 30 sec 4000 RPM
Exposure time: 18 sec
Hard bake: None

Flood E.: 60 sec
Develop: 1 min ?
Angle: 95.63±2.95 (n=16)
Imaged: March 28, 2023
Resist: 1827 Vacuum Contact **Vac Prime**
Image Reversal
Soft bake: 1 min at 115°C
Spread 1 sec 500 RPM, 30 sec 4000 RPM
Exposure time: 20 sec
Hard bake: None

Flood E.: 60 sec
Develop: 1 min ?
Angle: 95.12+-3.17 (n=22)
Imaged: March 28, 2023
Resist: AZ4620 Hard Contact
Soft bake: 3 min at 115°C
Spread 1 sec 500 RPM, 30 sec 3000 RPM
Exposure time: 30 sec
Hard bake: None

Flood E.: NA
Develop: ?
Angle: 75.0, 73.7, 73.3, 73.8, 76.3 Ave = 74.4
Imaged: March 13, 2023
Resist: AZ4620 Hard Contact
Soft bake: 3 min at 115°C
Spread 1 sec 500 RPM, 30 sec 3000 RPM
Exposure time: 30 sec
Hard bake: None

Flood E.: NA
Develop: ?
Angle: 76.3
Imaged: March 13, 2023
Plasma Ash: 30 sec
Resist: AZ4620 Vacuum Contact
Soft bake: 3 min at 115°C
Spread 1 sec 500 RPM, 30 sec 3000 RPM
Exposure time: 30 sec
Hard bake: None

Flood E.: NA
Develop: 5 min
Angle: 90.0, 88.4, 89.2, 89.0, 87.7, 90.8,
90.8, 88.3, 87.7, 90.9, 91.2, 88.7
Imaged: March, 17 2023
Resist: AZ4620 Vacuum Contact
Soft bake: 3 min at 115°C
Spread 1 sec 500 RPM, 30 sec 4000 RPM
Exposure time: 30 sec
Hard bake: 12hr Vacuum Bake 100°C

Flood E.: NA
Develop: 5 min
Angle: 92.42 ± 2.34° (n=11)
Imaged: March, 23 2023
<table>
<thead>
<tr>
<th>RESIST</th>
<th>LITHO TYPE</th>
<th>EXPOSURE TIME</th>
<th>FLOOD EXPOSURE TIME (SEC)</th>
<th>DEV TIME (MIN)</th>
<th>HARD BAKE (MIN)/(TEMP)</th>
<th>AVE. WALL ANGLE</th>
<th>SIGMA</th>
<th>NUMBER OF SAMPLES</th>
<th>COMMENTS</th>
</tr>
</thead>
<tbody>
<tr>
<td>1827</td>
<td>Hard</td>
<td>20</td>
<td>NA</td>
<td>1-2</td>
<td>2/115C</td>
<td>NA</td>
<td>NA</td>
<td>NA</td>
<td>Curved Profile</td>
</tr>
<tr>
<td>1827</td>
<td>Hard</td>
<td>20</td>
<td>NA</td>
<td>1-2</td>
<td>NA</td>
<td>62.2</td>
<td>NA</td>
<td>1</td>
<td>Vacuum baked</td>
</tr>
<tr>
<td>1827</td>
<td>Hard</td>
<td>20</td>
<td>NA</td>
<td>1-2</td>
<td>12 hrs/90C Vac</td>
<td>62.0</td>
<td>NA</td>
<td>1</td>
<td>Vacuum baked</td>
</tr>
<tr>
<td>1827</td>
<td>Direct write</td>
<td>NA</td>
<td>NA</td>
<td>1-2</td>
<td>NA</td>
<td>65</td>
<td>NA</td>
<td>1</td>
<td>Fresh resist from freezer</td>
</tr>
<tr>
<td>1827</td>
<td>Hard</td>
<td>20</td>
<td>NA</td>
<td>1-2</td>
<td>NA</td>
<td>63.2</td>
<td>NA</td>
<td>1</td>
<td>Fresh resist from freezer</td>
</tr>
<tr>
<td>1827</td>
<td>Hard</td>
<td>20</td>
<td>30</td>
<td>2</td>
<td>80-106</td>
<td>NA</td>
<td>NA</td>
<td>1</td>
<td>Walls concave</td>
</tr>
<tr>
<td>1827</td>
<td>Hard</td>
<td>20</td>
<td>40</td>
<td>2</td>
<td>86-95</td>
<td>NA</td>
<td>NA</td>
<td>2</td>
<td>Walls concave</td>
</tr>
<tr>
<td>1827</td>
<td>Hard</td>
<td>20</td>
<td>40</td>
<td>3</td>
<td>105.5</td>
<td>0.5</td>
<td>2</td>
<td>2</td>
<td>Reentrant</td>
</tr>
<tr>
<td>1827</td>
<td>Hard</td>
<td>20</td>
<td>60</td>
<td>3</td>
<td>102.5</td>
<td>0.8</td>
<td>2</td>
<td>2</td>
<td>Reentrant</td>
</tr>
<tr>
<td>1827</td>
<td>Hard</td>
<td>20</td>
<td>60</td>
<td>4</td>
<td>95.33</td>
<td>3.4</td>
<td>7</td>
<td>7</td>
<td>Reentrant</td>
</tr>
<tr>
<td>1827</td>
<td>Hard</td>
<td>20</td>
<td>60</td>
<td>5</td>
<td>98.43</td>
<td>3.0</td>
<td>6</td>
<td>6</td>
<td>Reentrant</td>
</tr>
<tr>
<td>1827</td>
<td>Hard</td>
<td>20</td>
<td>60</td>
<td>1:40</td>
<td>91.3</td>
<td>3.8</td>
<td>3</td>
<td>3</td>
<td>Concave</td>
</tr>
<tr>
<td>RESIST</td>
<td>LITHO TYPE</td>
<td>EXPOSURE TIME</td>
<td>FLOOD EXPOSURE TIME (SEC)</td>
<td>DEV TIME (MIN)</td>
<td>HARD BAKE (MIN)/(TEMP)</td>
<td>AVE. WALL ANGLE</td>
<td>SIGMA</td>
<td>NUMBER OF SAMPLES</td>
<td>COMMENTS</td>
</tr>
<tr>
<td>--------</td>
<td>------------</td>
<td>---------------</td>
<td>---------------------------</td>
<td>----------------</td>
<td>------------------------</td>
<td>----------------</td>
<td>-------</td>
<td>------------------</td>
<td>----------</td>
</tr>
<tr>
<td>1827</td>
<td>Hard</td>
<td>20</td>
<td>60</td>
<td>4</td>
<td>NA</td>
<td>98.3</td>
<td>NA</td>
<td>1</td>
<td>Short O2 plasma etch</td>
</tr>
<tr>
<td>1827</td>
<td>Hard</td>
<td>20</td>
<td>90</td>
<td>3</td>
<td>Vacuum 90C 12 hrs</td>
<td>NA</td>
<td>NA</td>
<td></td>
<td>Walls very curved</td>
</tr>
<tr>
<td>1827</td>
<td>Hard</td>
<td>20</td>
<td>90</td>
<td>3</td>
<td>NA</td>
<td>NA</td>
<td>NA</td>
<td>1</td>
<td>Walls very curved</td>
</tr>
<tr>
<td>1827</td>
<td>Hard</td>
<td>20</td>
<td>60</td>
<td>4</td>
<td>NA</td>
<td>94.1</td>
<td>1.5</td>
<td>6</td>
<td>Reentrant</td>
</tr>
<tr>
<td>1827</td>
<td>Hard</td>
<td>20</td>
<td>60</td>
<td>4</td>
<td>NA</td>
<td>104.1</td>
<td>2.3</td>
<td>4</td>
<td>Reentrant, O2 plasma 1 min</td>
</tr>
<tr>
<td>1827</td>
<td>Hard</td>
<td>20</td>
<td>60</td>
<td>4</td>
<td>NA</td>
<td>96.4</td>
<td>1.8</td>
<td>10</td>
<td>Reentrant O2 plasma 1:20</td>
</tr>
<tr>
<td>1827</td>
<td>Vac</td>
<td>18</td>
<td>NA</td>
<td>2</td>
<td>NA</td>
<td>84.1</td>
<td>2.3</td>
<td>12</td>
<td></td>
</tr>
<tr>
<td>1827</td>
<td>Vac</td>
<td>20</td>
<td>NA</td>
<td>2</td>
<td>NA</td>
<td>81.3</td>
<td>0.71</td>
<td>12</td>
<td></td>
</tr>
<tr>
<td>1827</td>
<td>Vac</td>
<td>24</td>
<td>NA</td>
<td>1:30</td>
<td>NA</td>
<td>74.6</td>
<td>2.4</td>
<td>6</td>
<td></td>
</tr>
<tr>
<td>1827</td>
<td>Hard</td>
<td>20</td>
<td>60</td>
<td>4</td>
<td>NA</td>
<td>109.6</td>
<td>1.9</td>
<td>7</td>
<td>Reentrant - REPRODUCING PREVIOUS Experiment</td>
</tr>
<tr>
<td>1827</td>
<td>Hard</td>
<td>20</td>
<td>60</td>
<td>4</td>
<td>NA</td>
<td>110.6</td>
<td>1.6</td>
<td>16</td>
<td>Reentrant - REPRODUCING PREVIOUS Experiment</td>
</tr>
<tr>
<td>1827</td>
<td>Vac</td>
<td>20</td>
<td>60</td>
<td>1</td>
<td>NA</td>
<td>89.9</td>
<td>1.1</td>
<td>16</td>
<td>Slight S shape to some walls</td>
</tr>
<tr>
<td>1827</td>
<td>Vac</td>
<td>20</td>
<td>60</td>
<td>1</td>
<td>NA</td>
<td>89.3</td>
<td>2.0</td>
<td>17</td>
<td>Slightly Concave</td>
</tr>
</tbody>
</table>

**Summary of Data**
<table>
<thead>
<tr>
<th>RESIST</th>
<th>LITHO TYPE</th>
<th>EXPOSURE TIME</th>
<th>FLOOD EXPOSURE TIME (SEC)</th>
<th>DEV TIME (MIN)</th>
<th>HARD BAKE (MIN)/(TEMP)</th>
<th>AVE. WALL ANGLE</th>
<th>SIGMA</th>
<th>NUMBER OF SAMPLES</th>
<th>COMMENTS</th>
</tr>
</thead>
<tbody>
<tr>
<td>AZ 4620</td>
<td>Hard</td>
<td>30</td>
<td>NA</td>
<td>?</td>
<td>NA</td>
<td>74.4</td>
<td>1.1</td>
<td>17</td>
<td></td>
</tr>
<tr>
<td>AZ 4620</td>
<td>Hard</td>
<td>30</td>
<td>NA</td>
<td>?</td>
<td>NA</td>
<td>76.3</td>
<td></td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>AZ 4620</td>
<td>Vac</td>
<td>30</td>
<td>NA</td>
<td>?</td>
<td>NA</td>
<td>89.4</td>
<td>1.2</td>
<td>12</td>
<td>Somewhat S shaped</td>
</tr>
<tr>
<td>AZ 4620</td>
<td>Vac</td>
<td>30</td>
<td>NA</td>
<td>?</td>
<td>240hrs vac 100C</td>
<td>92.4</td>
<td>2.34</td>
<td>11</td>
<td>Upside down top hat</td>
</tr>
<tr>
<td>1827</td>
<td>Vac</td>
<td>14</td>
<td>NA</td>
<td>1</td>
<td>NA</td>
<td>69.716667</td>
<td>1.3452592</td>
<td>12</td>
<td></td>
</tr>
<tr>
<td>1827</td>
<td>Vac</td>
<td>16</td>
<td>NA</td>
<td>1</td>
<td>NA</td>
<td>79.438889</td>
<td>1.4514892</td>
<td>18</td>
<td></td>
</tr>
<tr>
<td>1827</td>
<td>Vac</td>
<td>18</td>
<td>NA</td>
<td>1</td>
<td>NA</td>
<td>83.216667</td>
<td>1.182394</td>
<td>6</td>
<td></td>
</tr>
<tr>
<td>1827</td>
<td>Vac</td>
<td>20</td>
<td>NA</td>
<td>1</td>
<td>NA</td>
<td>78.991667</td>
<td>1.6121716</td>
<td>11</td>
<td></td>
</tr>
<tr>
<td>1827</td>
<td>Vac</td>
<td>14</td>
<td>NA</td>
<td>1</td>
<td>NA</td>
<td>66.05</td>
<td>2.9867764</td>
<td>12 Spin Prime</td>
<td></td>
</tr>
<tr>
<td>1827</td>
<td>Vac</td>
<td>16</td>
<td>NA</td>
<td>1</td>
<td>NA</td>
<td>77.42</td>
<td>2.3094588</td>
<td>15 Spin Prime</td>
<td></td>
</tr>
<tr>
<td>1827</td>
<td>Vac</td>
<td>18</td>
<td>NA</td>
<td>1</td>
<td>NA</td>
<td>77.30625</td>
<td>1.6972289</td>
<td>16 Spin Prime</td>
<td></td>
</tr>
<tr>
<td>1827</td>
<td>Vac</td>
<td>20</td>
<td>NA</td>
<td>1</td>
<td>NA</td>
<td>84.016667</td>
<td>1.07458</td>
<td>12 Spin Prime</td>
<td></td>
</tr>
<tr>
<td>1827</td>
<td>Vac</td>
<td>14</td>
<td>60</td>
<td>1</td>
<td>NA</td>
<td>101.87143</td>
<td>2.7514746</td>
<td>14</td>
<td></td>
</tr>
<tr>
<td>1827</td>
<td>Vac</td>
<td>16</td>
<td>60</td>
<td>1</td>
<td>NA</td>
<td>96.785</td>
<td>3.485581</td>
<td>20</td>
<td></td>
</tr>
<tr>
<td>1827</td>
<td>Vac</td>
<td>18</td>
<td>60</td>
<td>1</td>
<td>NA</td>
<td>95.625</td>
<td>2.9812959</td>
<td>16</td>
<td></td>
</tr>
<tr>
<td>1827</td>
<td>Vac</td>
<td>20</td>
<td>60</td>
<td>1</td>
<td>NA</td>
<td>95.118182</td>
<td>3.1668218</td>
<td>22</td>
<td></td>
</tr>
</tbody>
</table>

**Summary of Data**
Conclusions/ Issues

• Best 1827 Conditions: Vacuum contact with image reversal. Exp Time: 20 sec, 60 sec Flood Exposure, 1 min develop
• Above can be vacuum baked at 90C for 12 hours if needed
• Best AZ 4620 Conditions: Vacuum contact, Exp Time: 30 sec, ? min develop