

# Phantom QA Results: 32 CH

**Date:10/19/2020**

**Dartmouth Brain Imaging Center (DBIC)**

| Measurement                               | Value | Comments  |
|---|-------|---|
| Signal-to-Noise Ratio (SNR)               | 248.8 |   |
| Signal-to-Fluctuation-Noise ratio (SFNR)  | 237.6 |   |
| Radius of Decorrelation (RDC) (fig 3)     | 8.6   |   |
| Drift (fig 1)                             | 0.41  |   |
| Percent Fluctuation (fig 1)               | 0.05  |   |
| Fourier analysis of the residuals (fig 2) | <2    |   |
| Ghost Mean Percentage (fig 10)            | 2.14% | Better than the recommended level (3% < ) in ref 2: |

Table 1: Key measurements

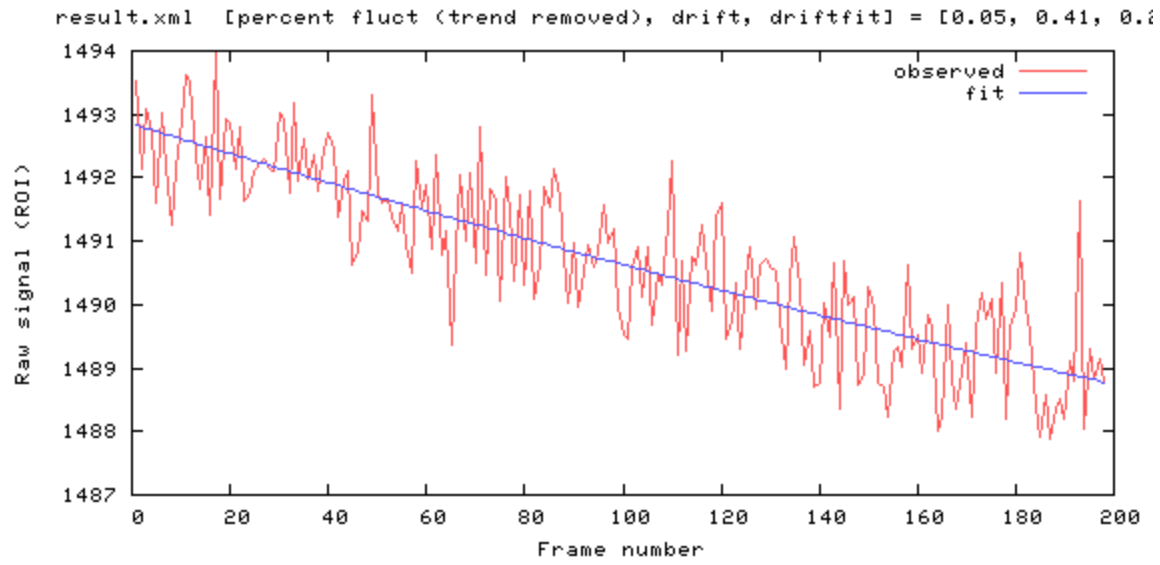


Figure 1

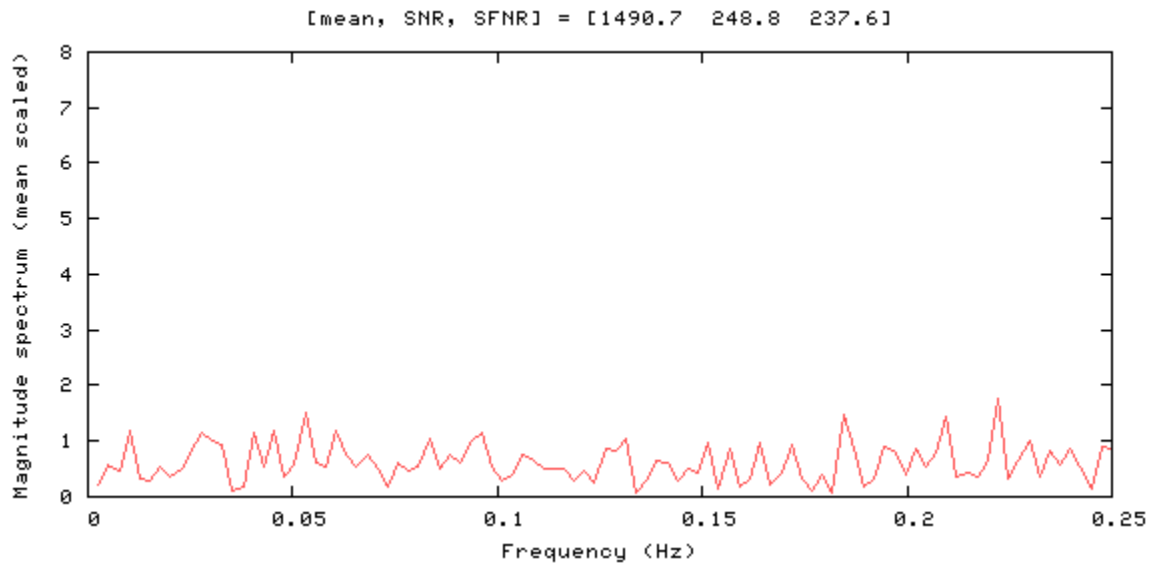


Figure 2

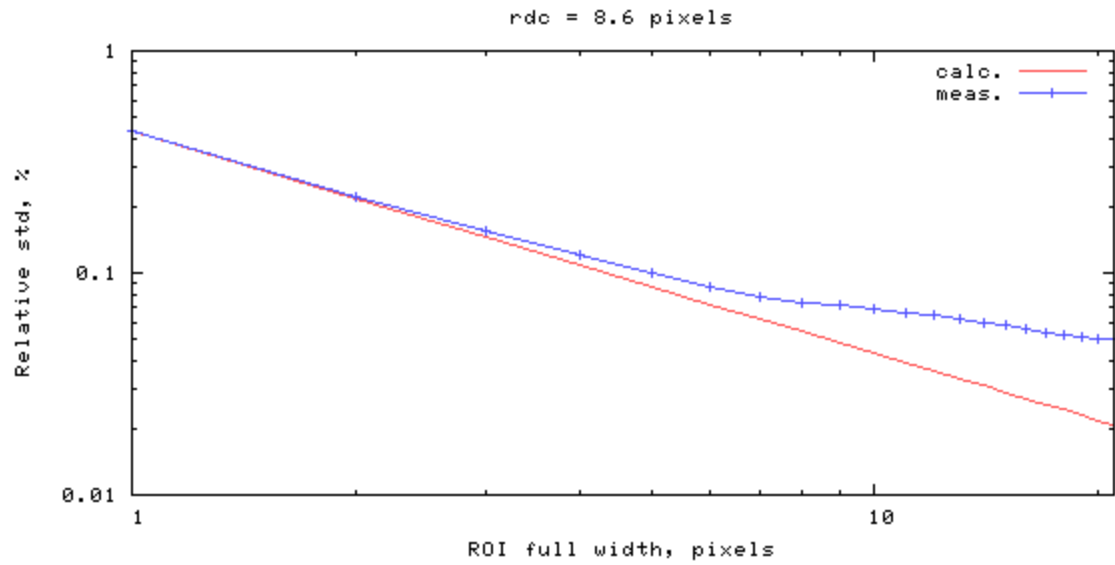


Figure 3

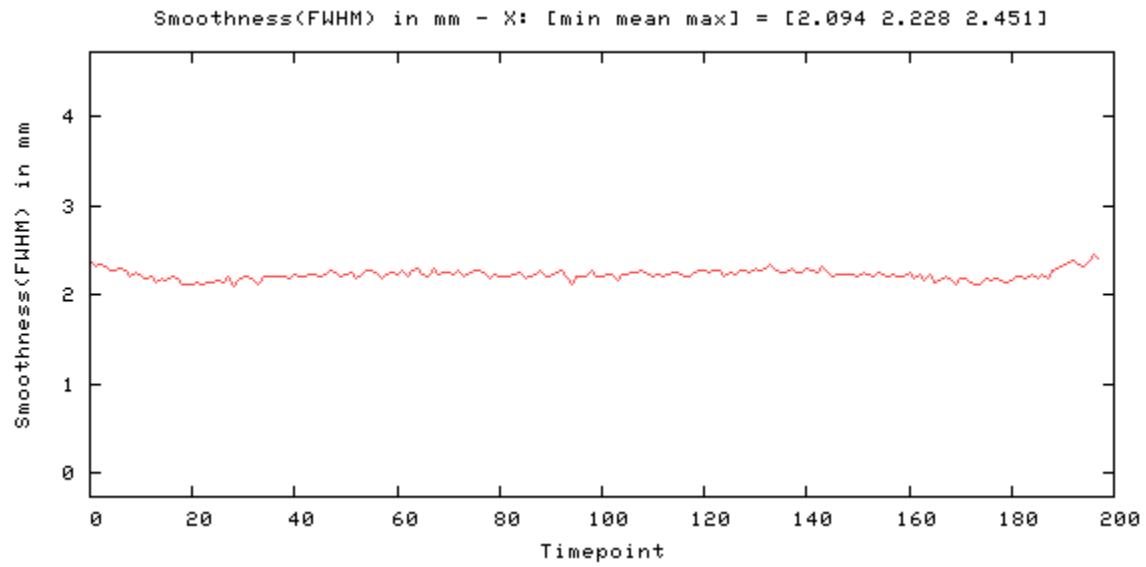


Figure 4

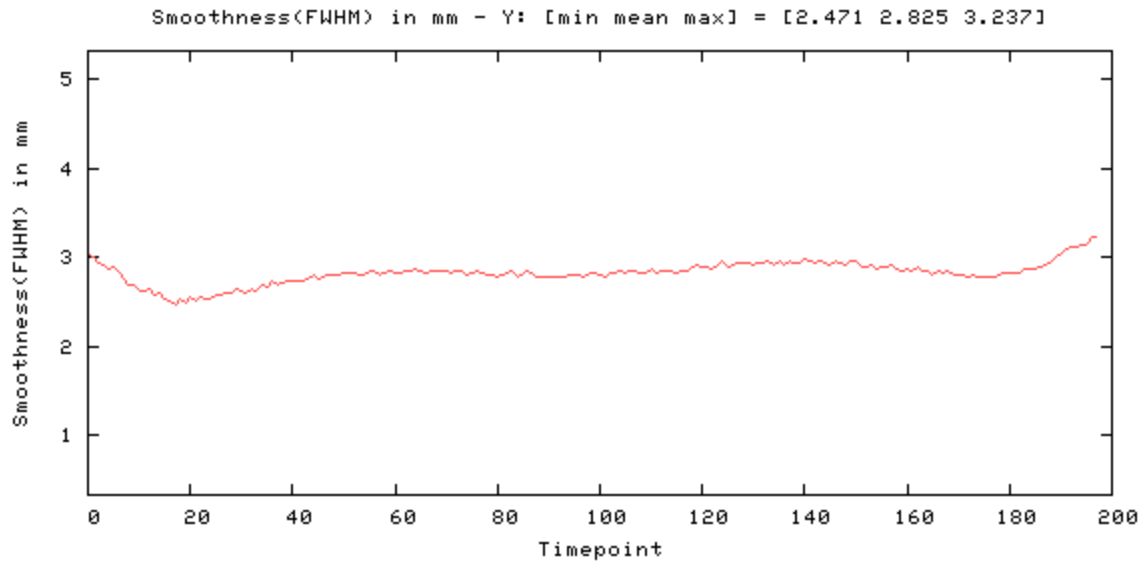


Figure 5

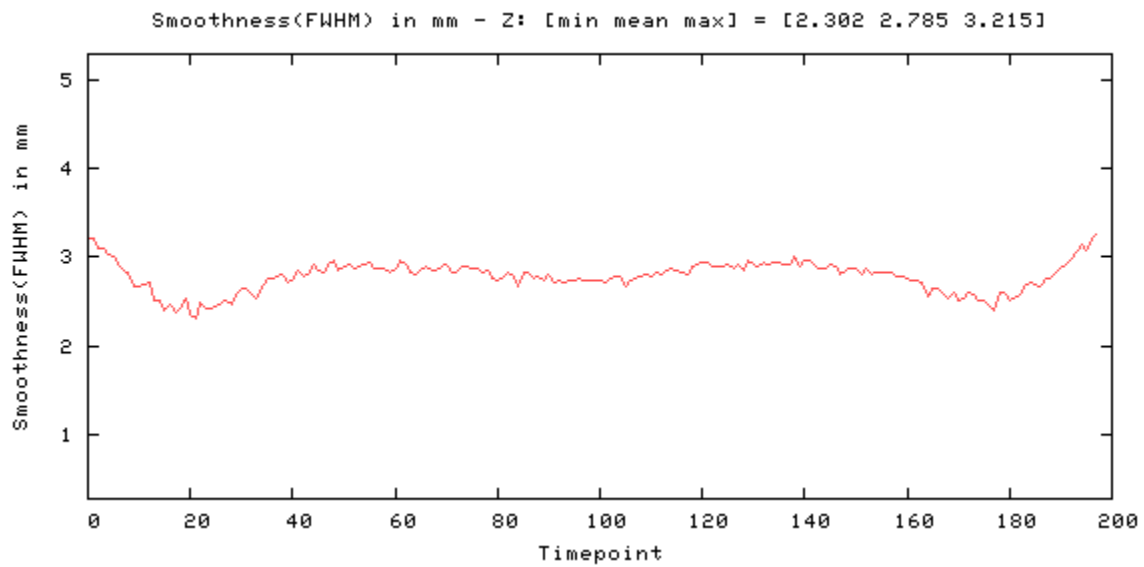


Figure 6

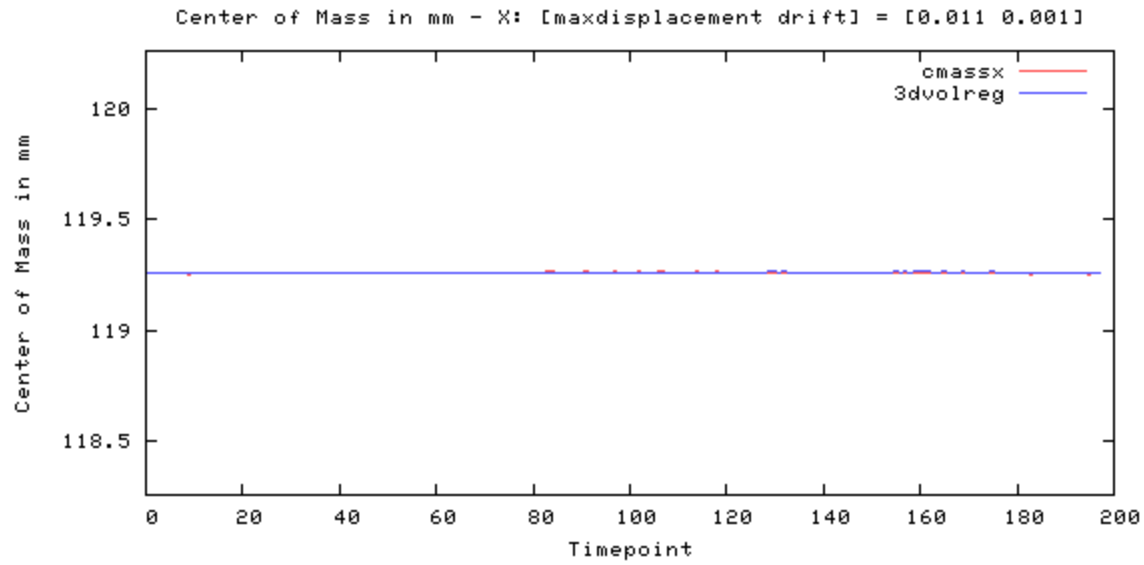


Figure 7

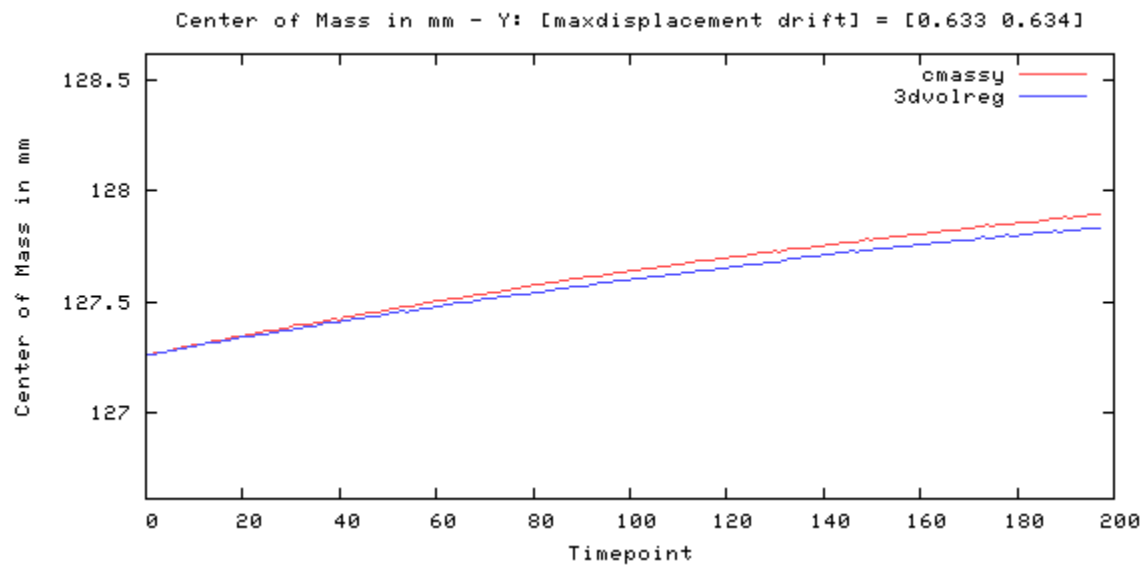


Figure 8

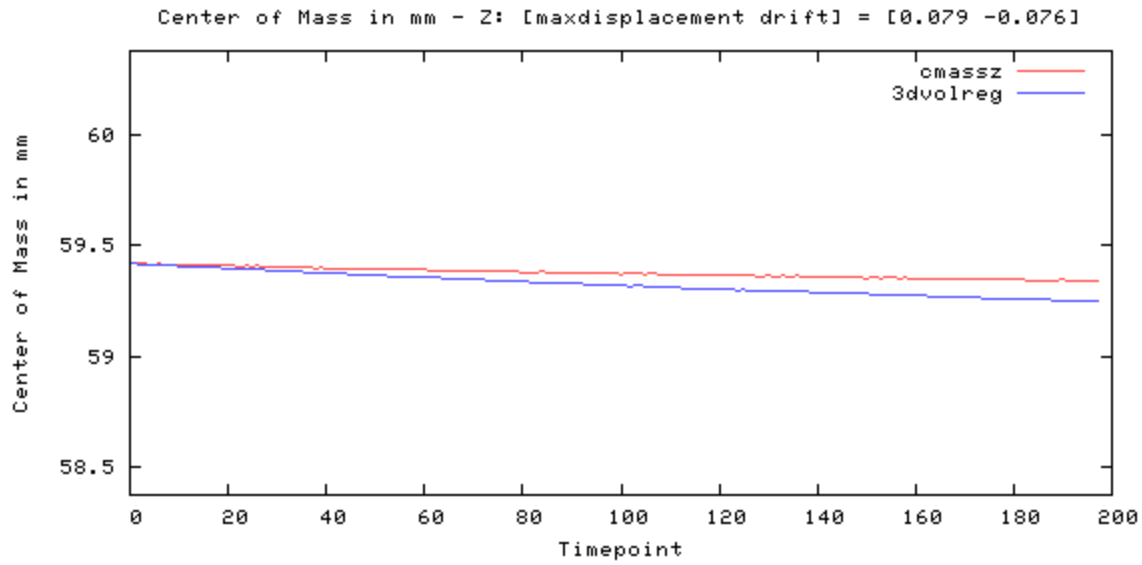


Figure 9

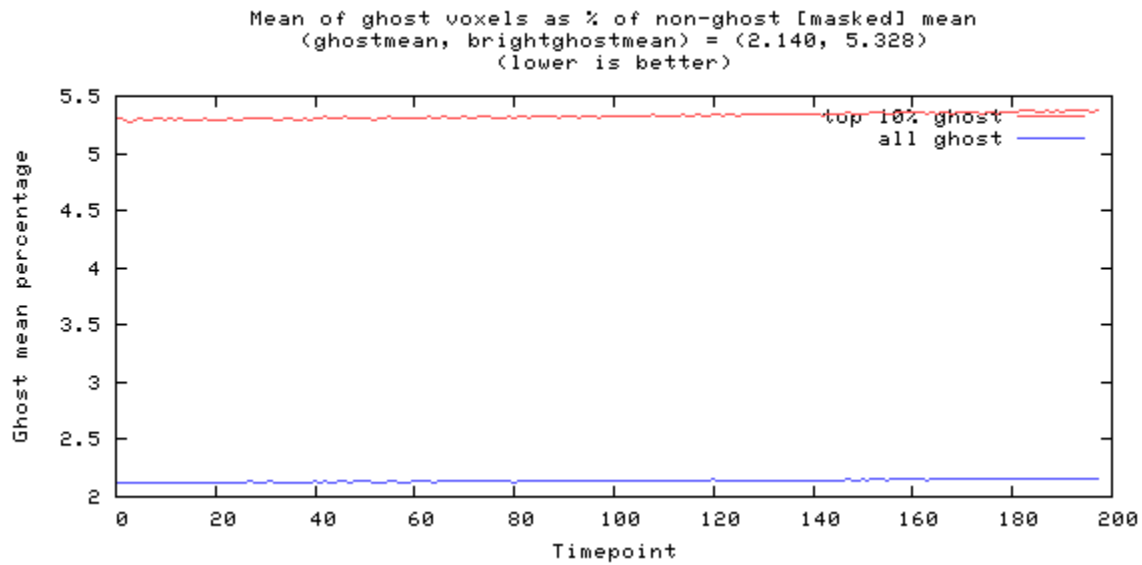


Figure 10

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## Odd-even difference image



image min: -285, image max: 324

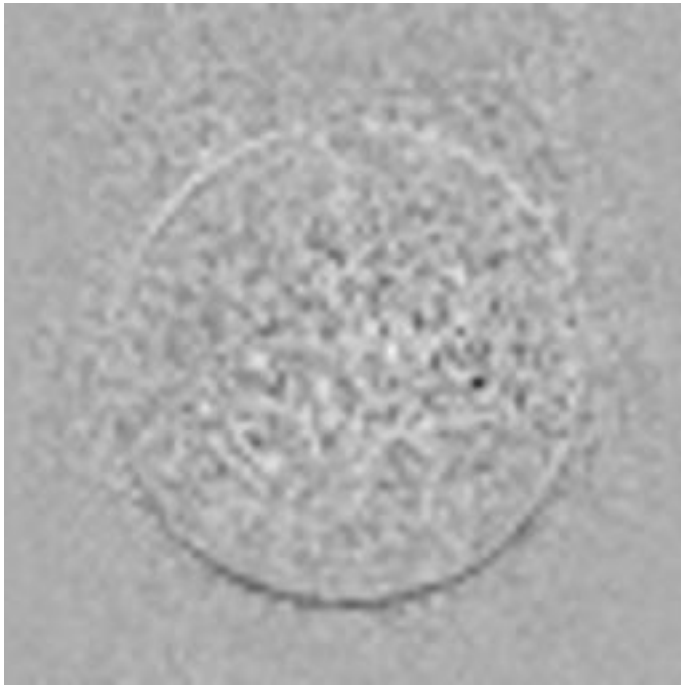


Figure 11

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## Mean image



image min: 0, image max: 2090.33

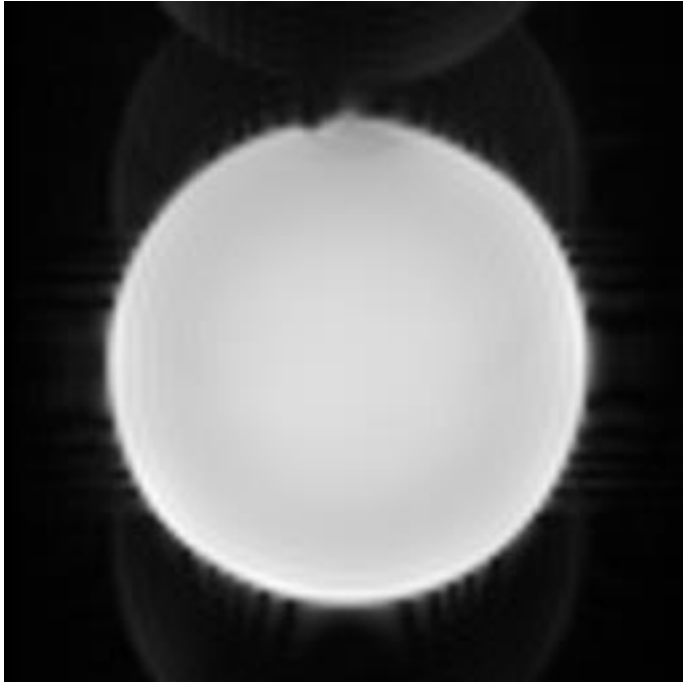


Figure 12



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## Standard Deviation image



image min: 0, image max: 17.7784

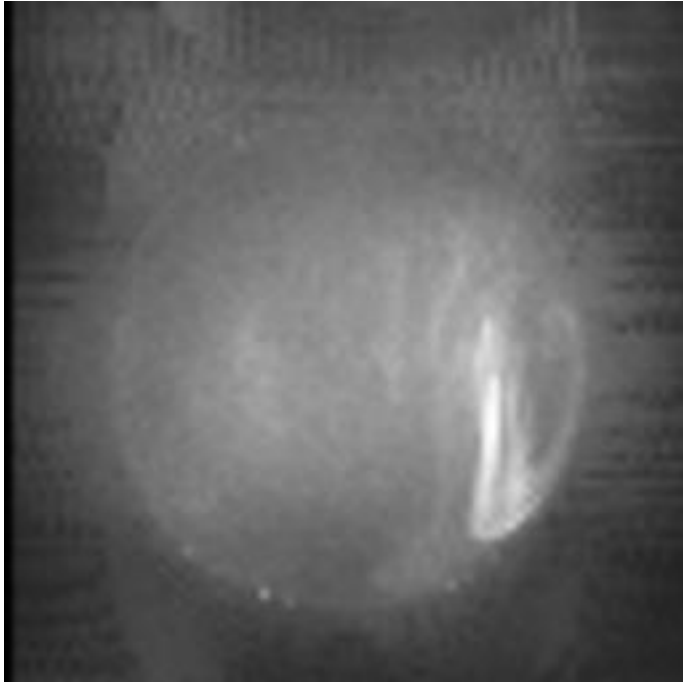


Figure 13

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## SFNR image



image min: 0, image max: 823.343

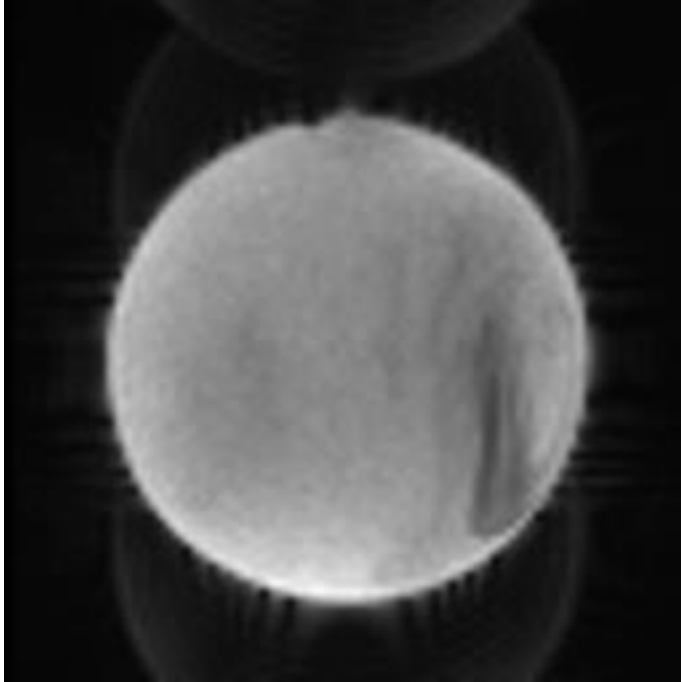


Figure 14

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## Acquisition parameters

|                        |   |
|------------------------|---|
| dimensions             | 80x80x30x200  |
| spacing                | 3mmx3mmx3.99mmx2000ms                                   |
| gap                    | 0mmx0mmx0.49mmx0ms                                      |
| scanner                | AWP66112  |
| psdname                | %SiemensSeq%\ep2d_bold                                  |
| examnumber             | 56  |
| studyid                | qa  |
| seriesnumber           | 9   |
| runnumber              | 1   |
| scanningsequence       | EP  |
| sequencevariant        | SK  |
| magneticfield          | 3   |
| description            | func-bold_task-rest_acq-p2                              |
| scandate               | 2020-10-19  |
| scantime               | 10:11:07  |
| tr                     | 2000  |
| te                     | 35.000000   |
| flipangle              | 90  |
| prescribedslicespacing | 3.99  |
| frequencydirection     | 1   |
| acquisitionmatrix      | 80 80   |
| bandwidth              | 185.2   |
| transmitcoilname       | Body  |
| institution            | Dartmouth College - PBS                                 |
| examdescription        | dbic^QA   |
| scanner                | AWP66112  |
| scannermanufacturer    | SIEMENS   |
| scannermodelname       | Prisma  |
| fieldofview            | 240 240   |
| psdname                | %SiemensSeq%\ep2d_bold                                  |
| protocolname           | func-bold_task-rest_acq-p2 (func-bold_task-rest_acq-p2) |

|                               |  |
|-------------------------------|--|
| institutionaddress            | Maynard 3,Hanover,NH,US,03755  |
| institutionaldepartmentname   | Department   |
| scanoptions                   | FS   |
| mracquisitiontype             | 2D   |
| sequencename                  | *epfid2d1_80   |
| angioflag                     | N  |
| numaverages                   | 1  |
| imagingfrequency              | 123.252348   |
| imagednucleus                 | 1H   |
| spacingbetweenslices          | 3.9900000631045  |
| numphaseencodingsteps         | 79   |
| echotrainlength               | 39   |
| percentsampling               | 100  |
| percentphasefieldofview       | 100  |
| scannerserialnumber           | 66112  |
| softwareversions              | syngo MR E11   |
| inplanephaseencodingdirection | COL  |
| variableflipangleflag         | N  |
| sar                           | 0.04742881176475   |
| dBdt                          | 0  |
| acquisitionnumber             | 1  |
| instancenumber                | 1  |
| samplesperpixel               | 1  |
| photometricinterpretation     | MONOCHROME2  |
| rows                          | 480  |
| columns                       | 480  |
| bitsallocated                 | 16   |
| bitsstored                    | 12   |
| highbit                       | 11   |
| pixelbandwidth                | 2315   |
| otherinfo                     |  |
| sliceorder                    | 2,4,6,8,10,12,14,16,18,20,22,24,26,28,30,1,3,5,7,9,11,13,15,17,19,21 |

References:

1. Friedman L, Glover GH. Report on a multicenter fMRI quality assurance protocol. *J Magn Reson Imaging*. 2006a; 23(6):827–839. [PubMed: 16649196]
2. Acceptance Testing and Quality Assurance Procedures for Magnetic Resonance Imaging Facilities, AAPM Report No. 100
3. [https://www.nitrc.org/projects/bxh\\_xcede\\_tools](https://www.nitrc.org/projects/bxh_xcede_tools)