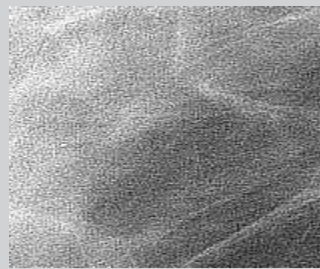
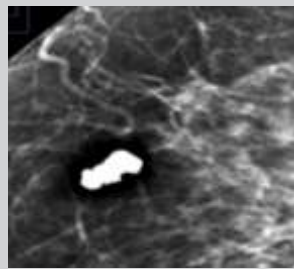
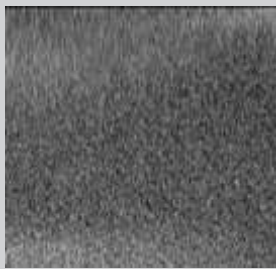
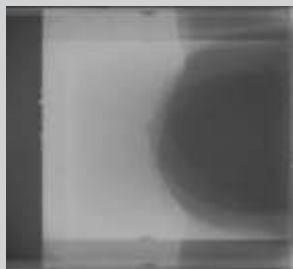


# Problemen uit de praktijk

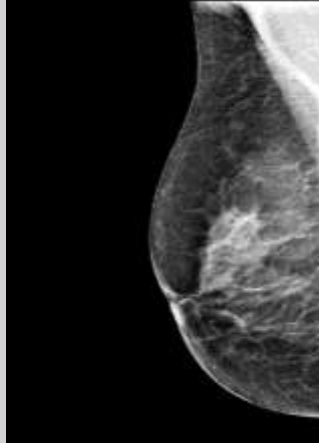
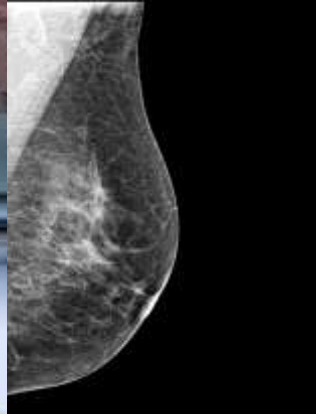


Hans Lelivelt  
Fysische Groep  
LRCB, Nijmegen

- Fysica – Radioloog – MBB'er
- Toestelproblemen
- Strepen in beeld
- Beeldbewerking
- Bedieningsfouten
- Overige problemen

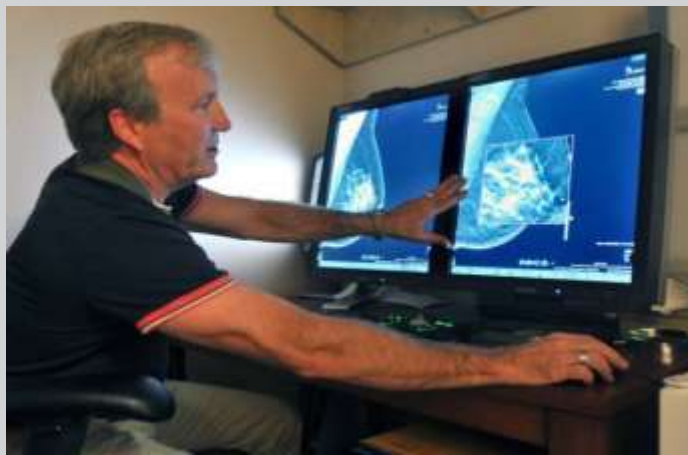
• Fysica – Radioloog – MBB'er

# Belang van patient is een correcte uitslag



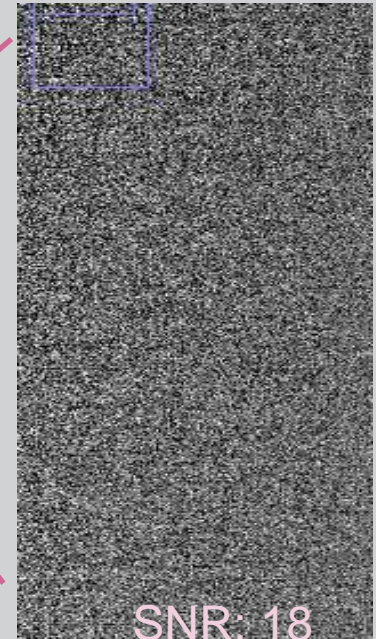
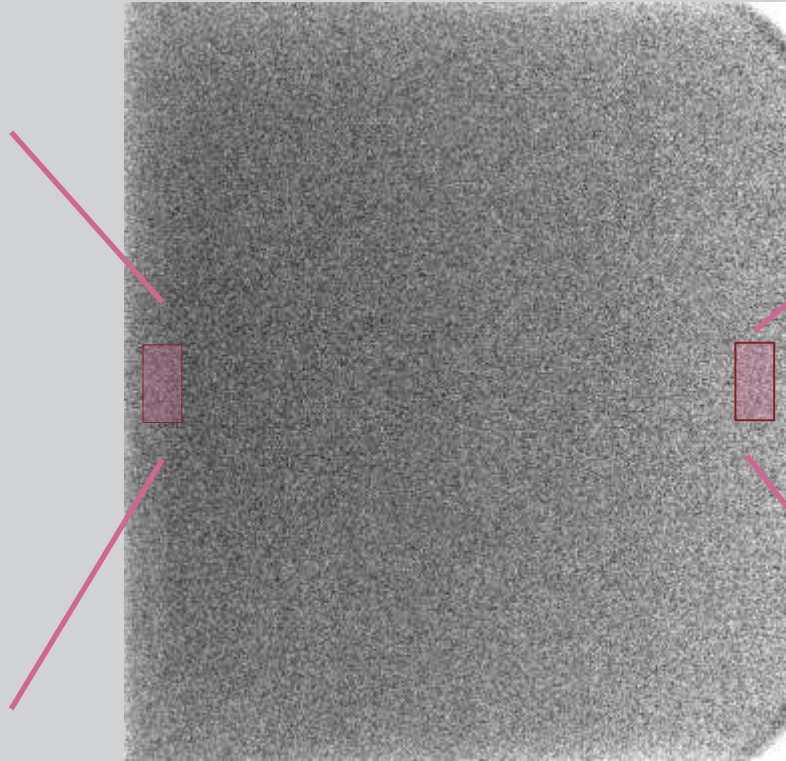
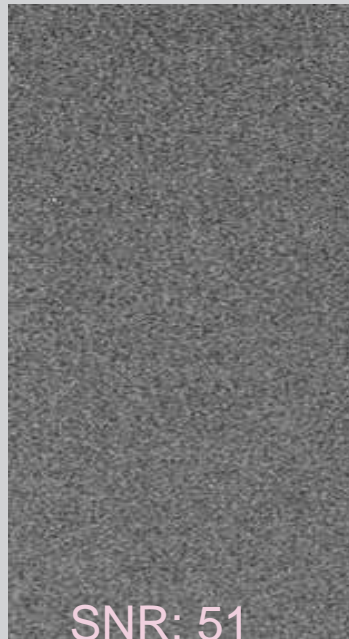
# Alle 3 onderdelen zijn even belangrijk

- Insteltechniek
- Fysica
- Radioloog



# Toestelproblemen

# Groot verschil in SNR door hiel effect



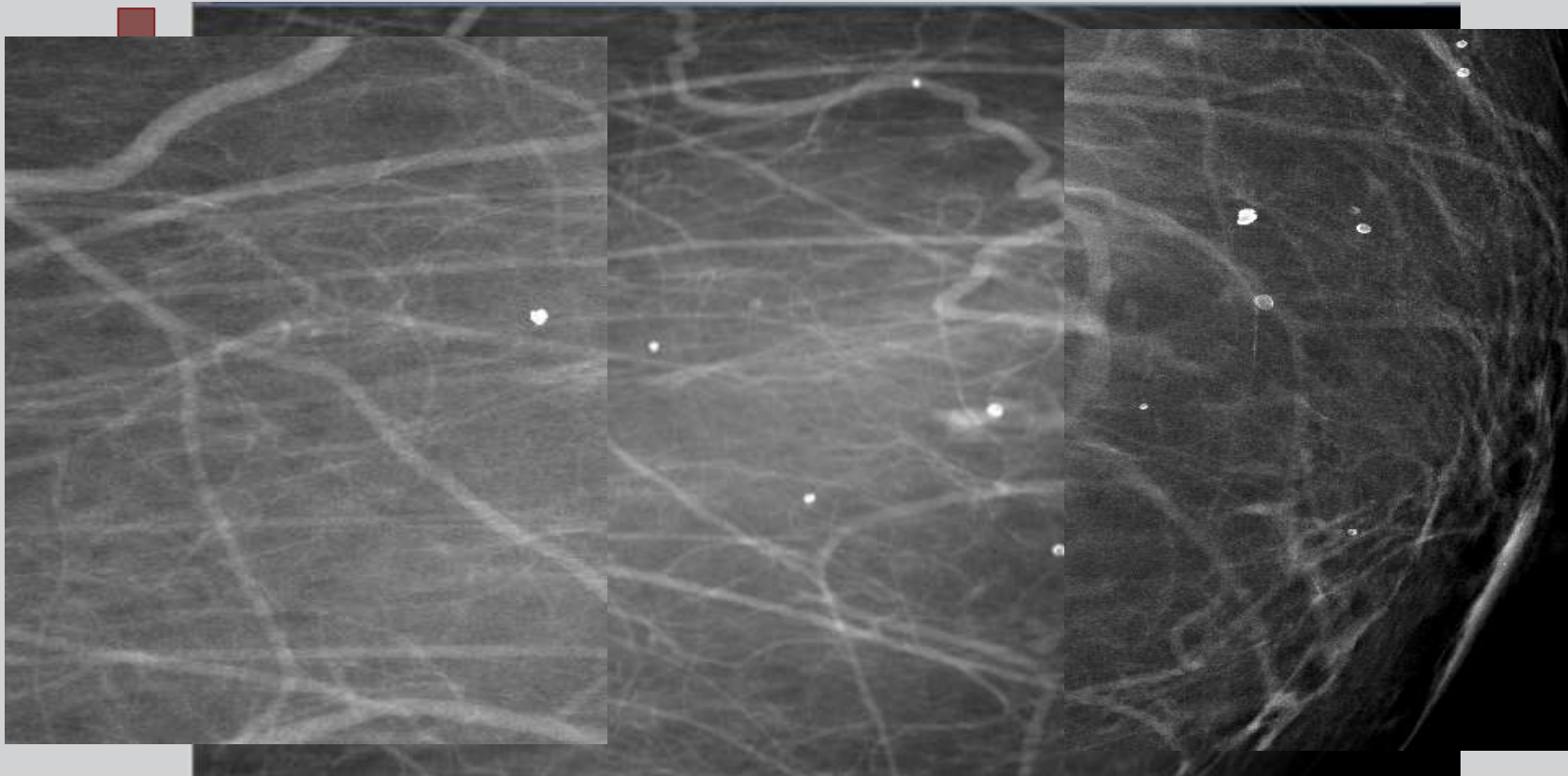
Oorzaak:

Versterkt hieffect na grotere detector en overgang van Mo naar W anode

Vraag:

Wat is het effect op klinische beelden ?



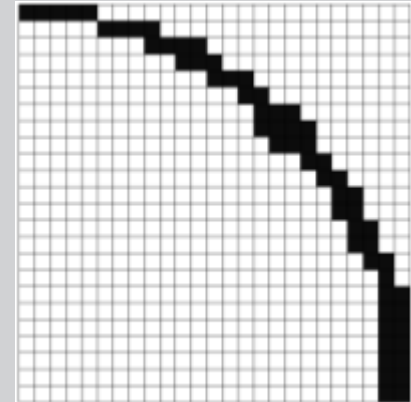


Oorzaak:

Versterkt hieffect na grotere detector en overgang van Mo naar W anode

Oplossing:

Verandering van de ophanging van de buis.



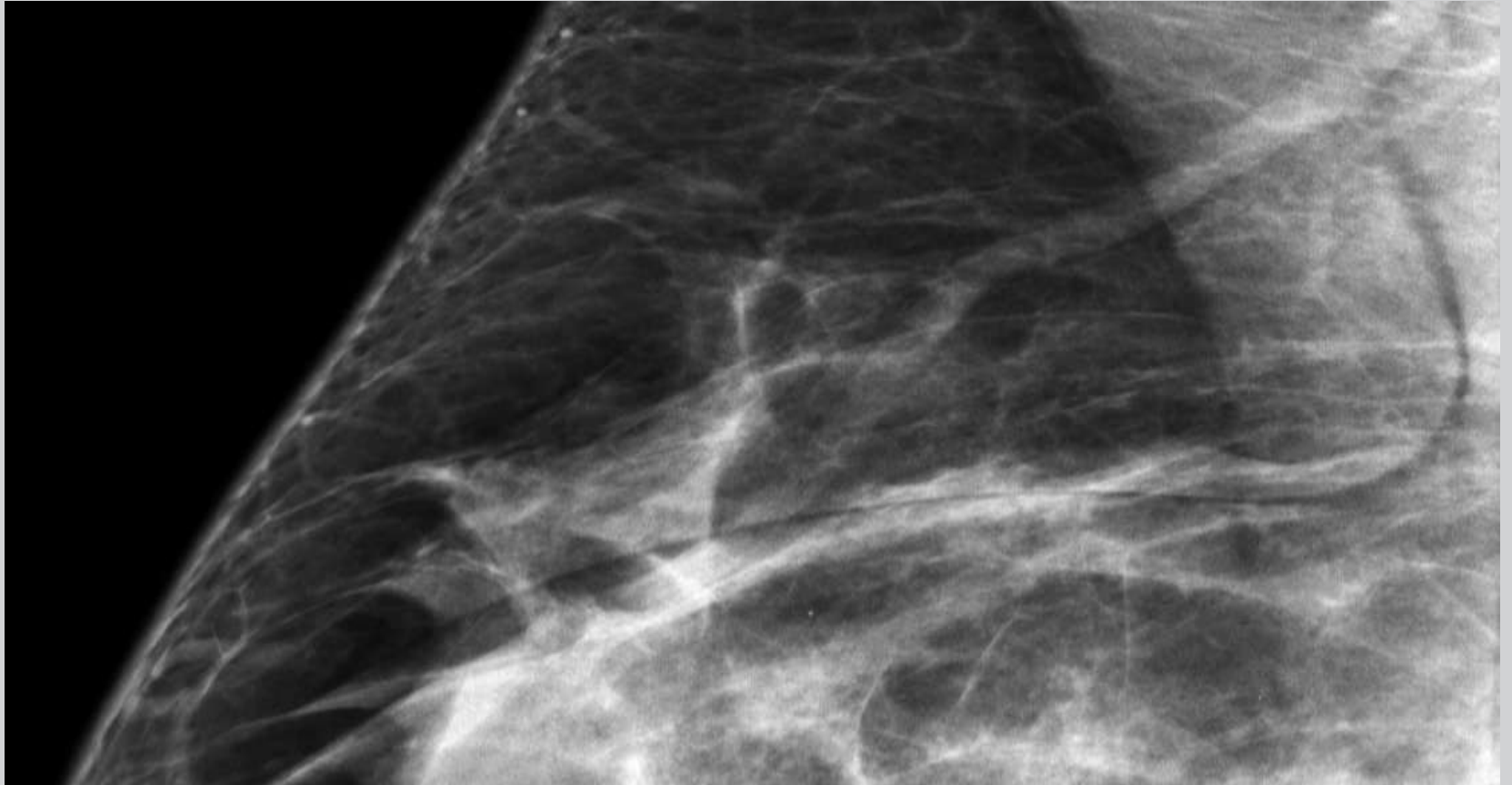
Oorzaak:

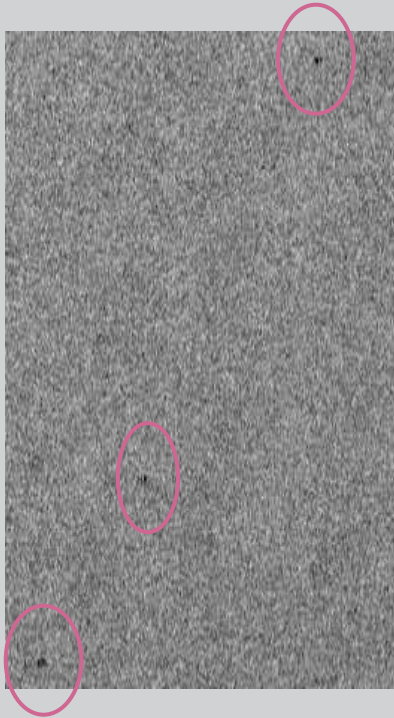
Aanwezigheid van vuil op de detector, onder de bucky.

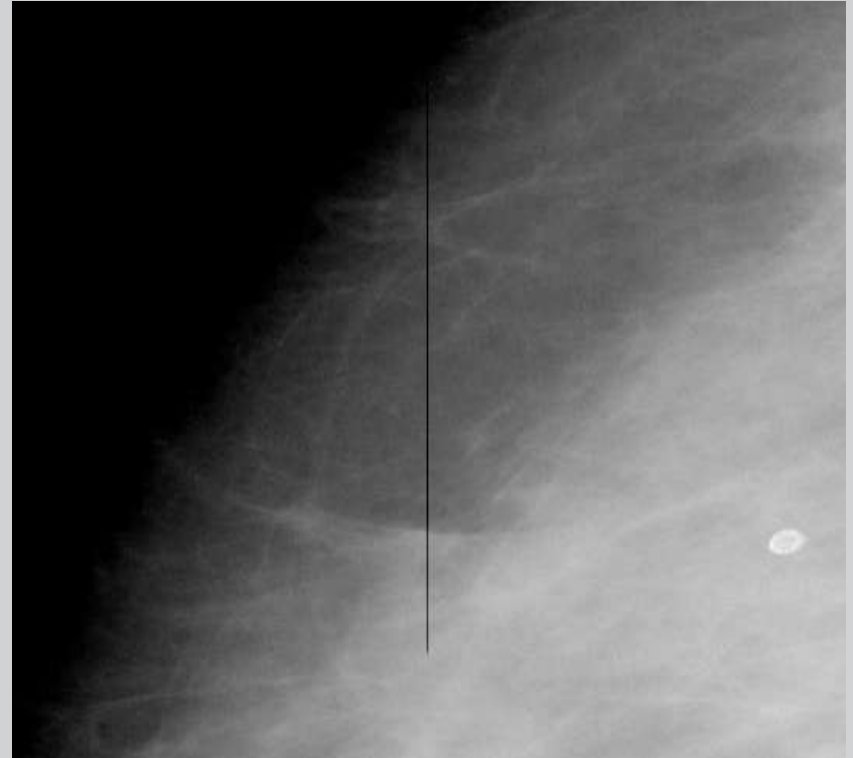
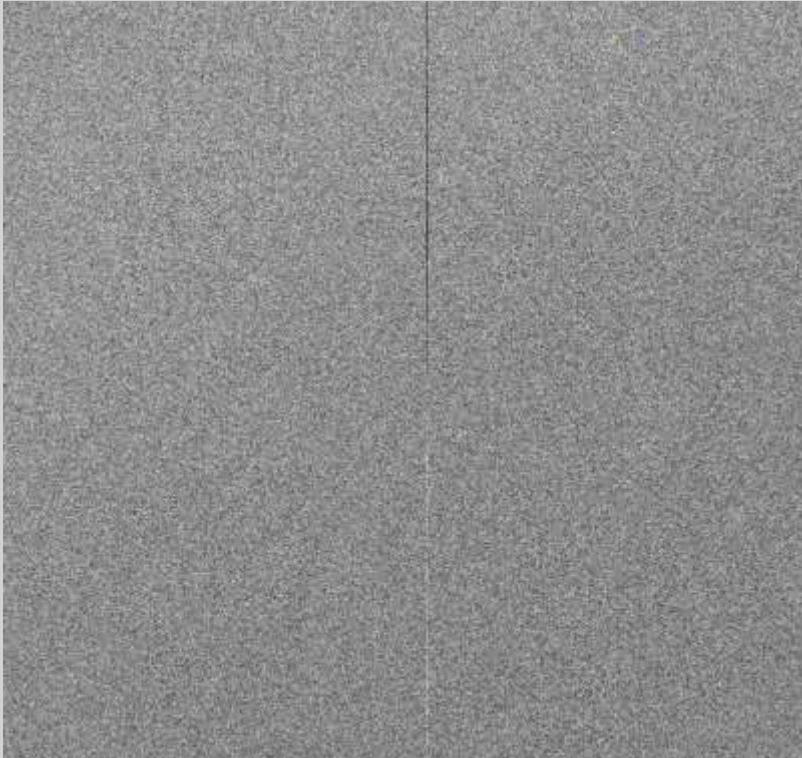
Oplossing:

Het vuiltje is verwijderd en de (flatfield en badpixel) kalibraties zijn opnieuw uitgevoerd.





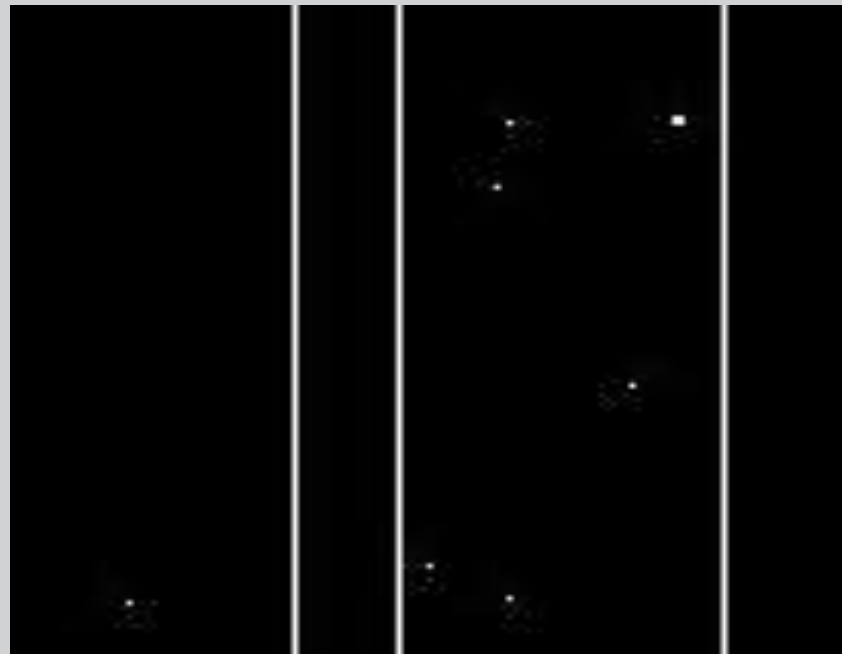




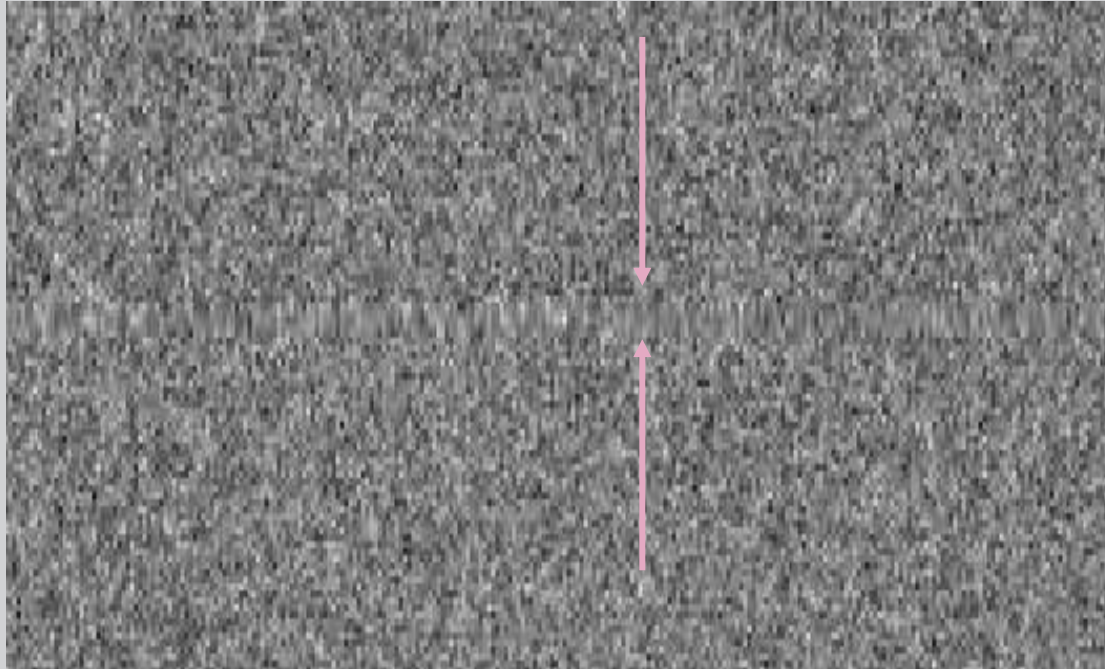


Oorzaak:  
Defect geraakte kolom.

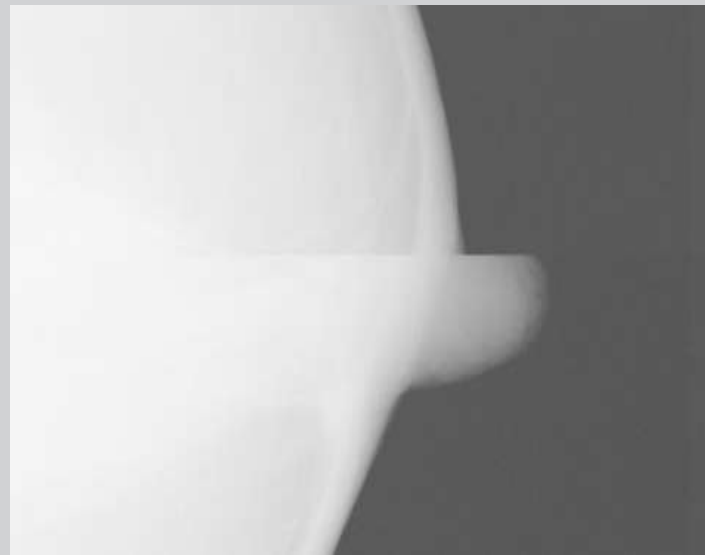
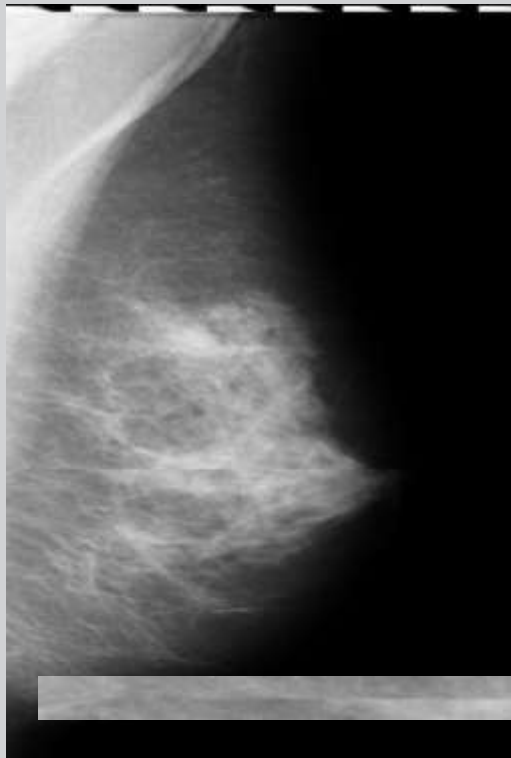
Oplossing:  
Kolom op laten nemen in  
de badpixel map zodat  
deze gereconstrueerd  
wordt.



# Teveel defecte rijen bij elkaar

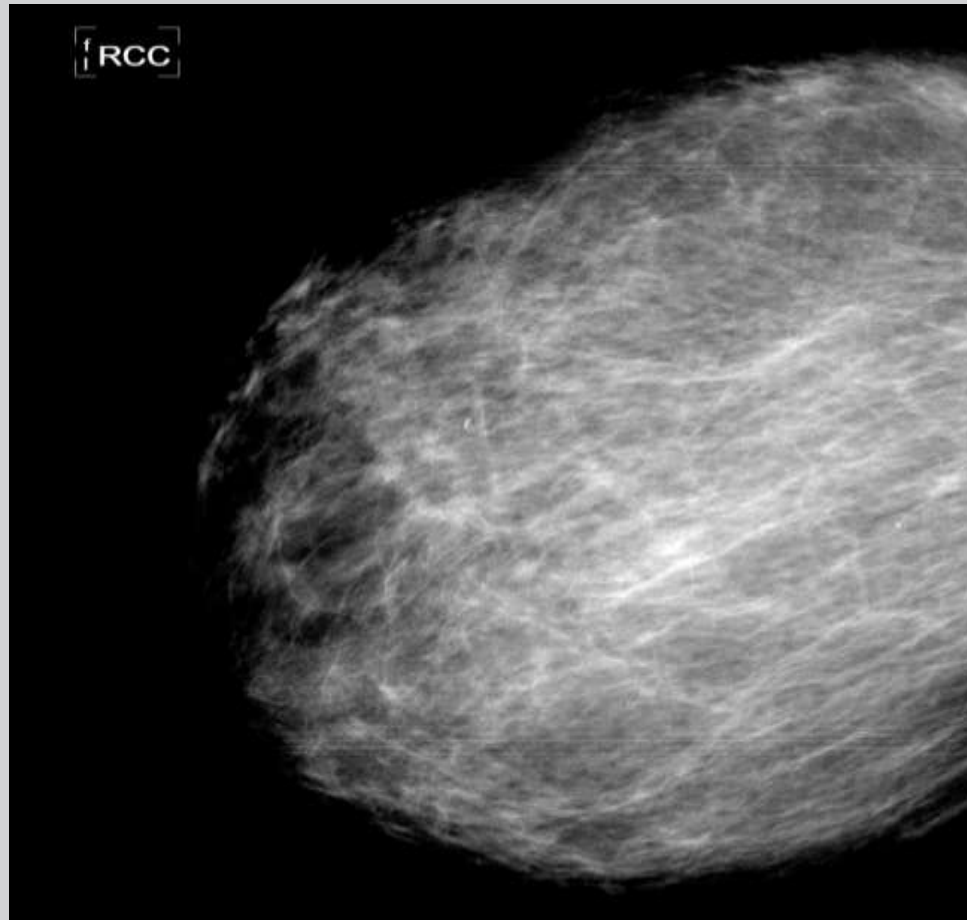


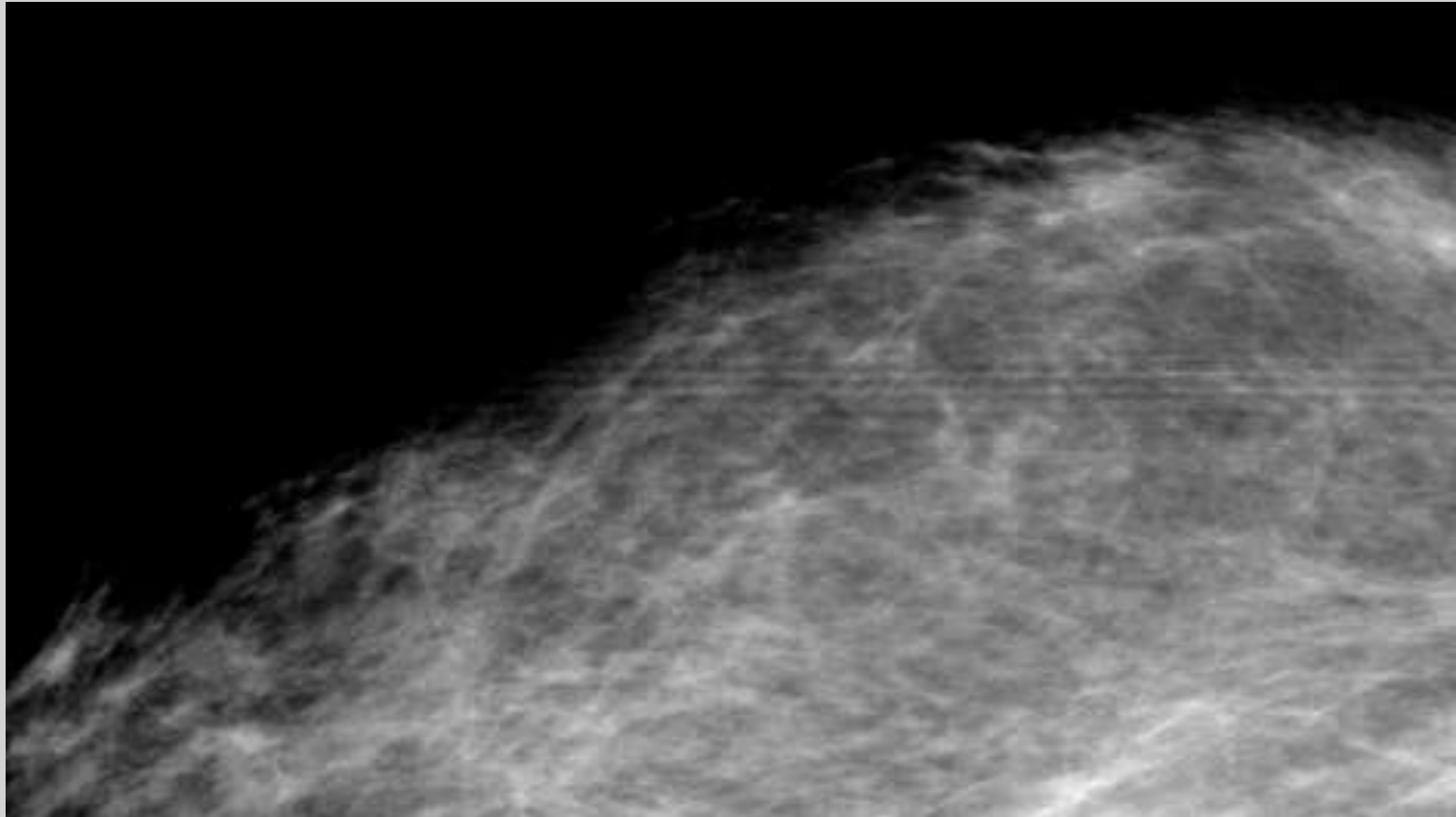


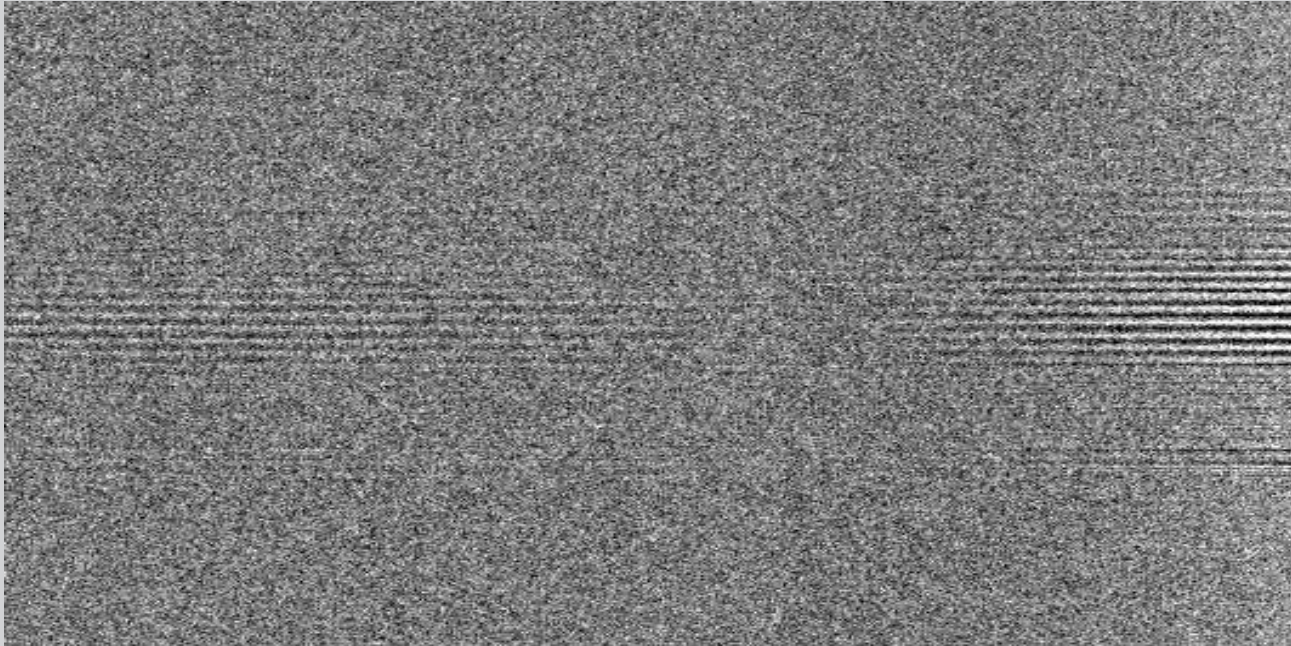


# Strepen in beeld

# Symmetrisch lijnartefact door trilling of beweging









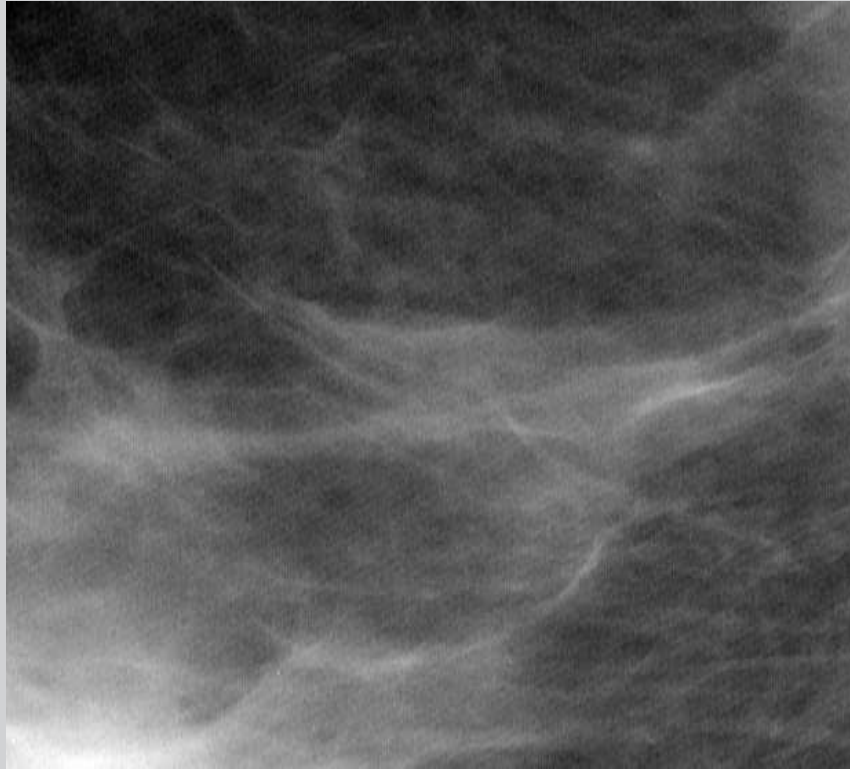
Oorzaak:

Trilling/stoten tijdens het uitlezen van de detector.

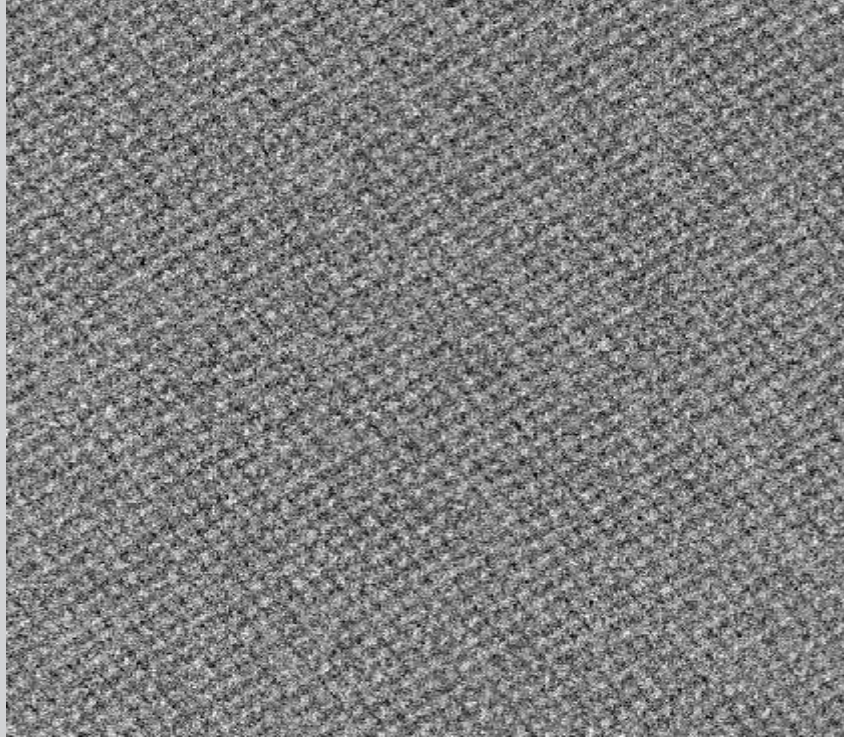
Oplossing:

Proberen dit te voorkomen.

Opnamen overmaken.



# Niet (goed) bewegend rooster

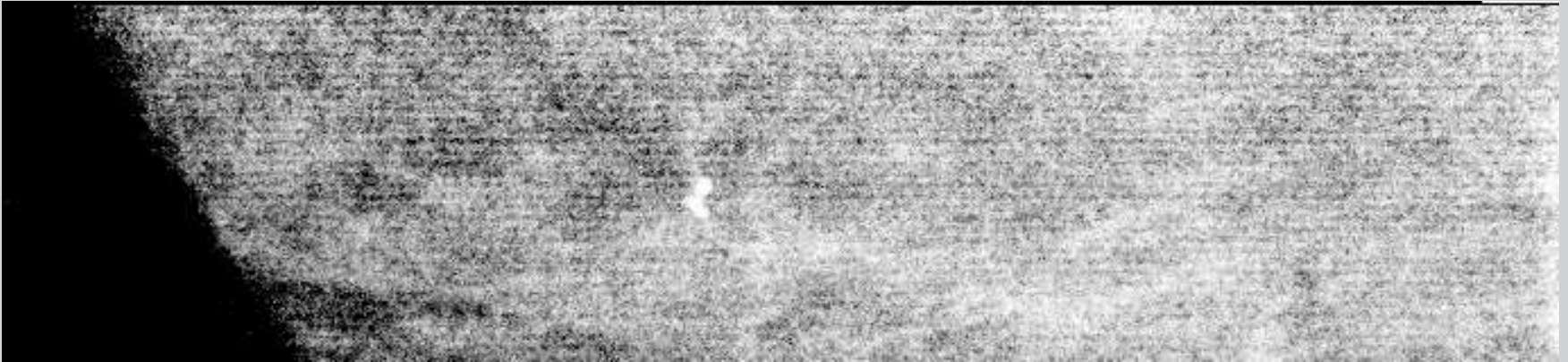


## Oorzaak:

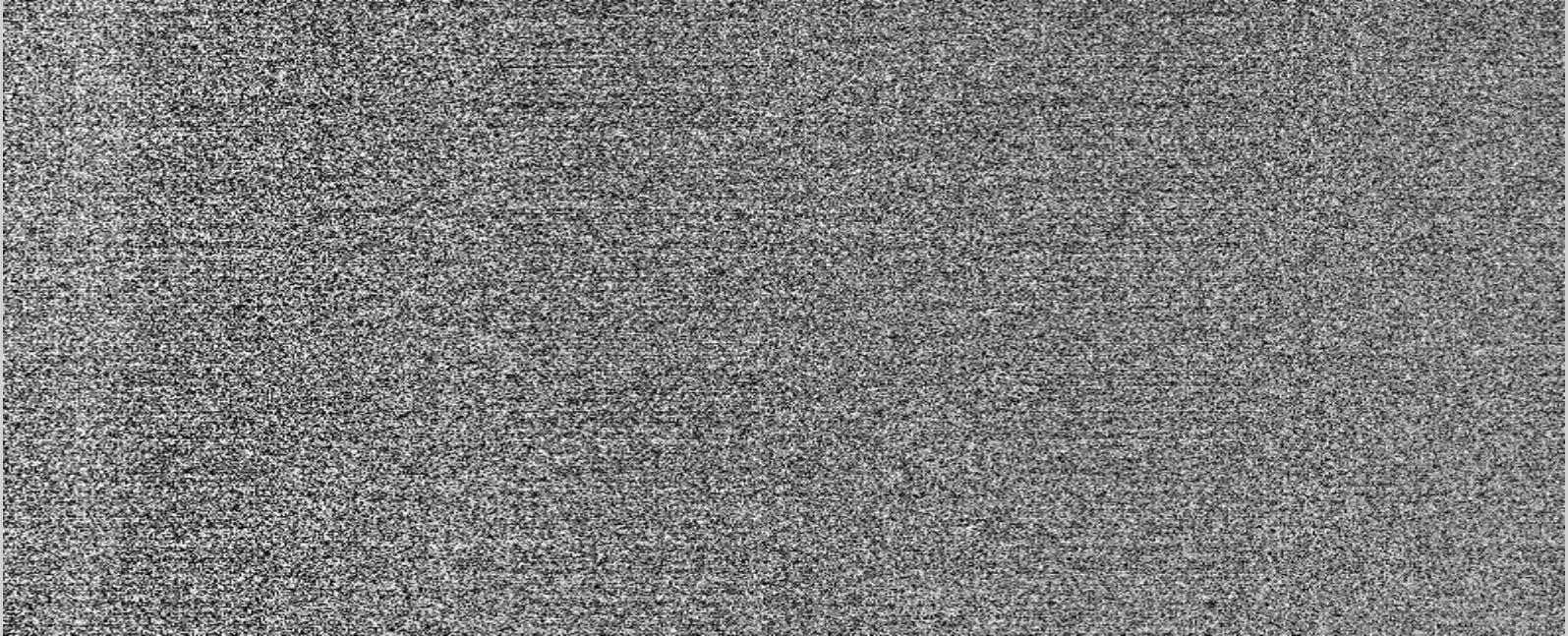
De beweging van het rooster was niet goed tijdens het maken van opnamen.

## Oplossing:

Firma laten komen om dit te laten verhelpen.

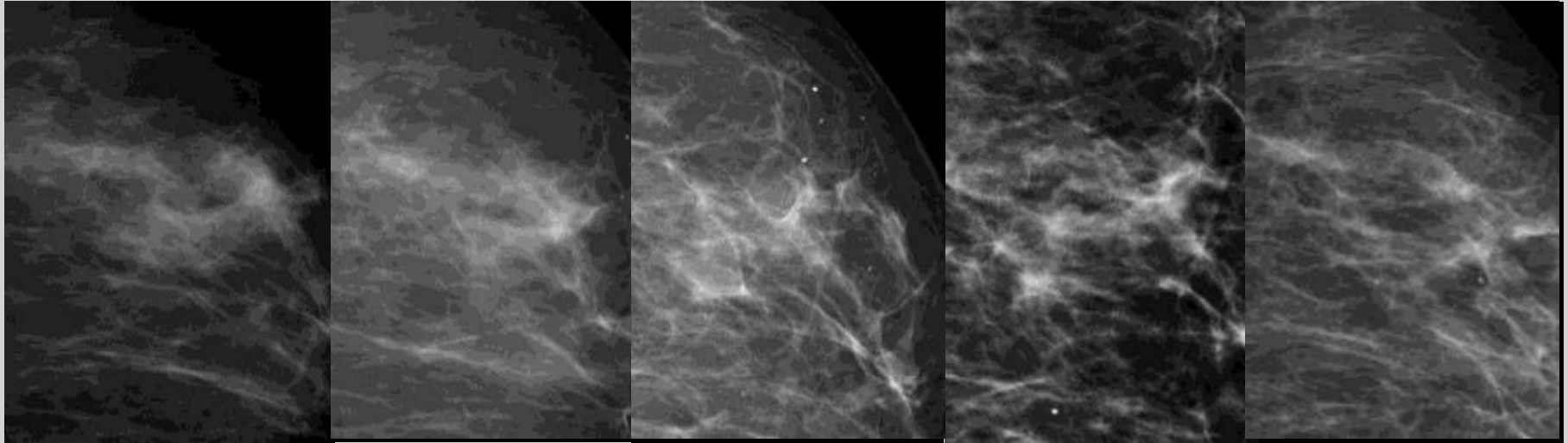






# Beeldbewerking





2005

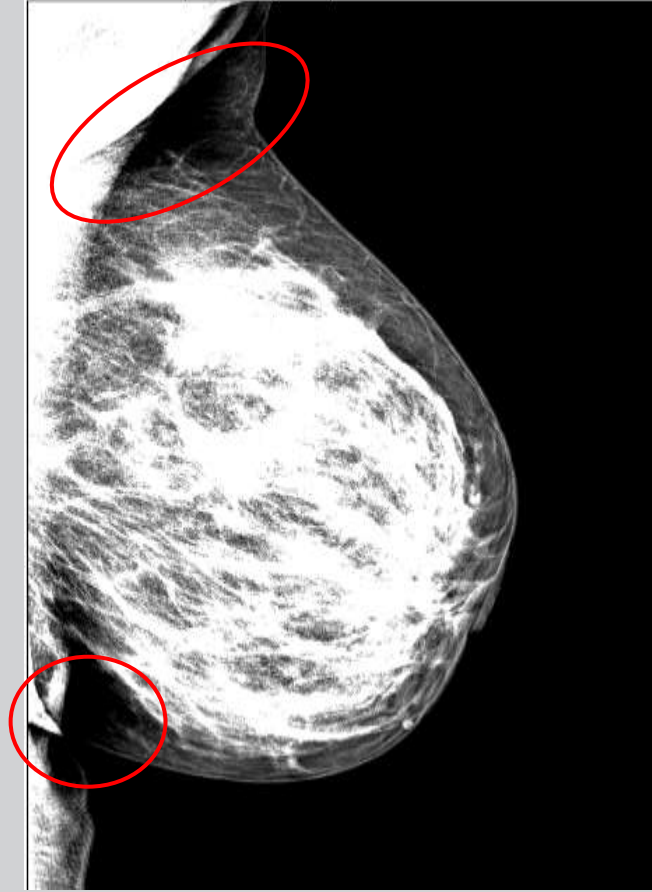
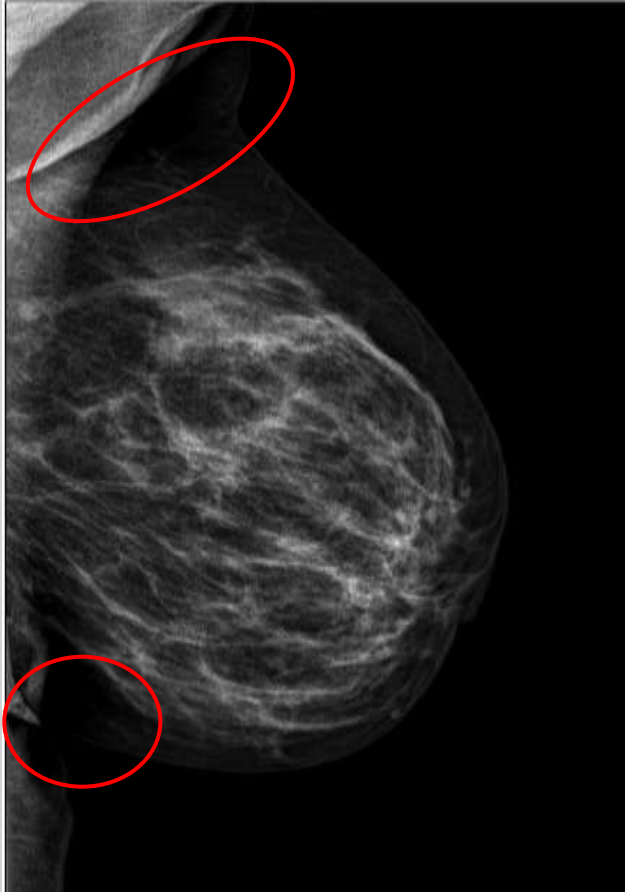
2007

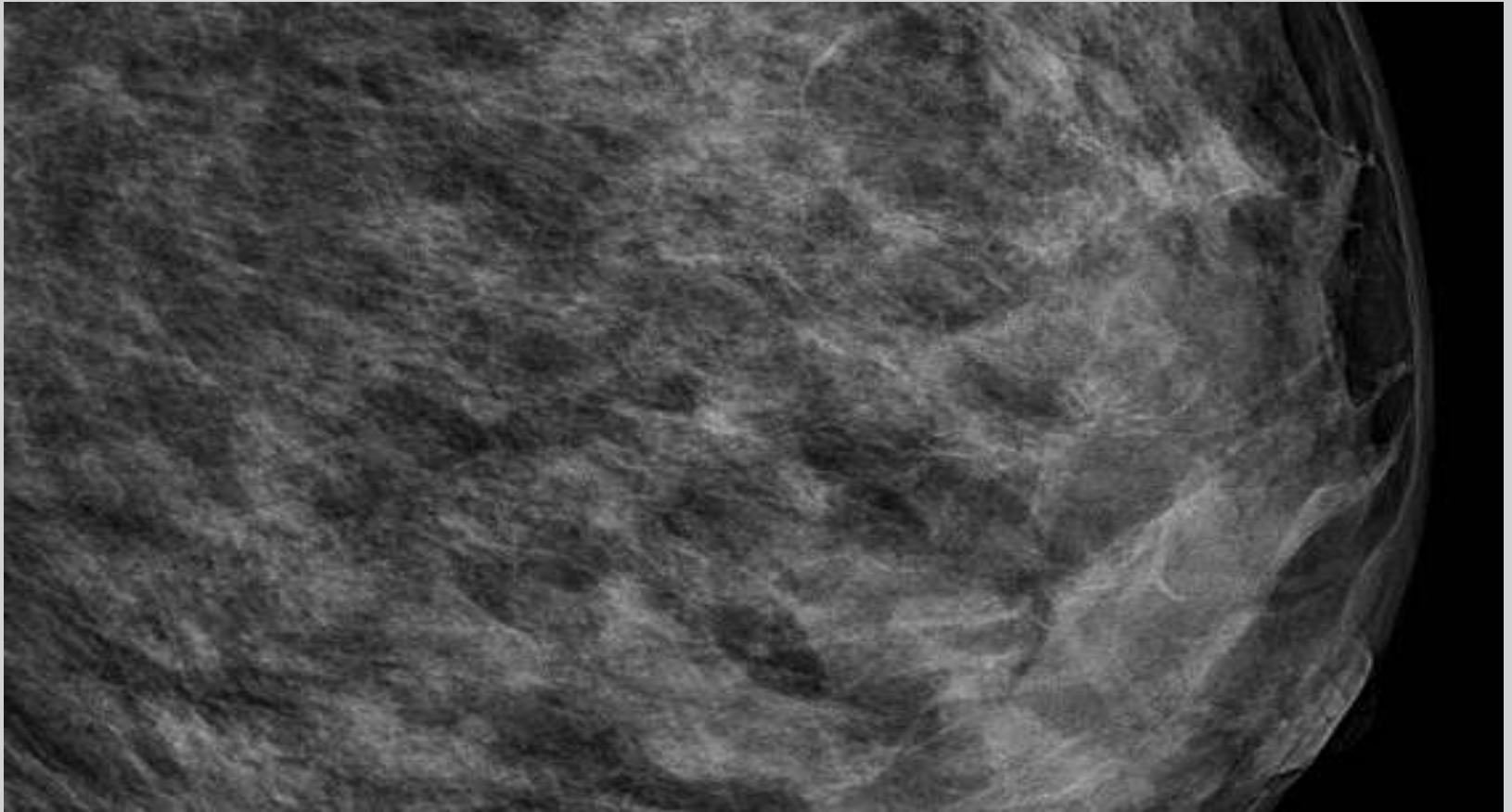
2009

2011

2013

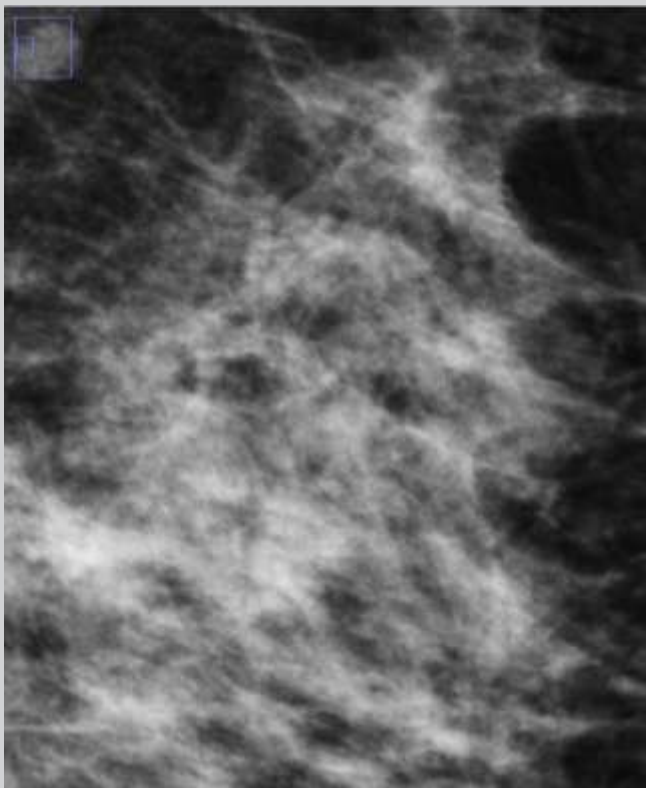




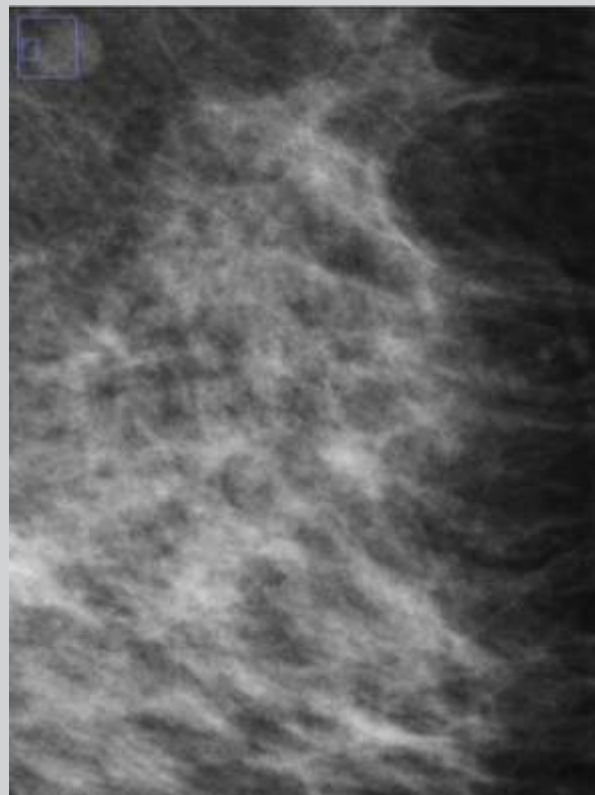


kVp: 32  
Filter: Rh  
mAs: 147

BPT: 68mm



2012



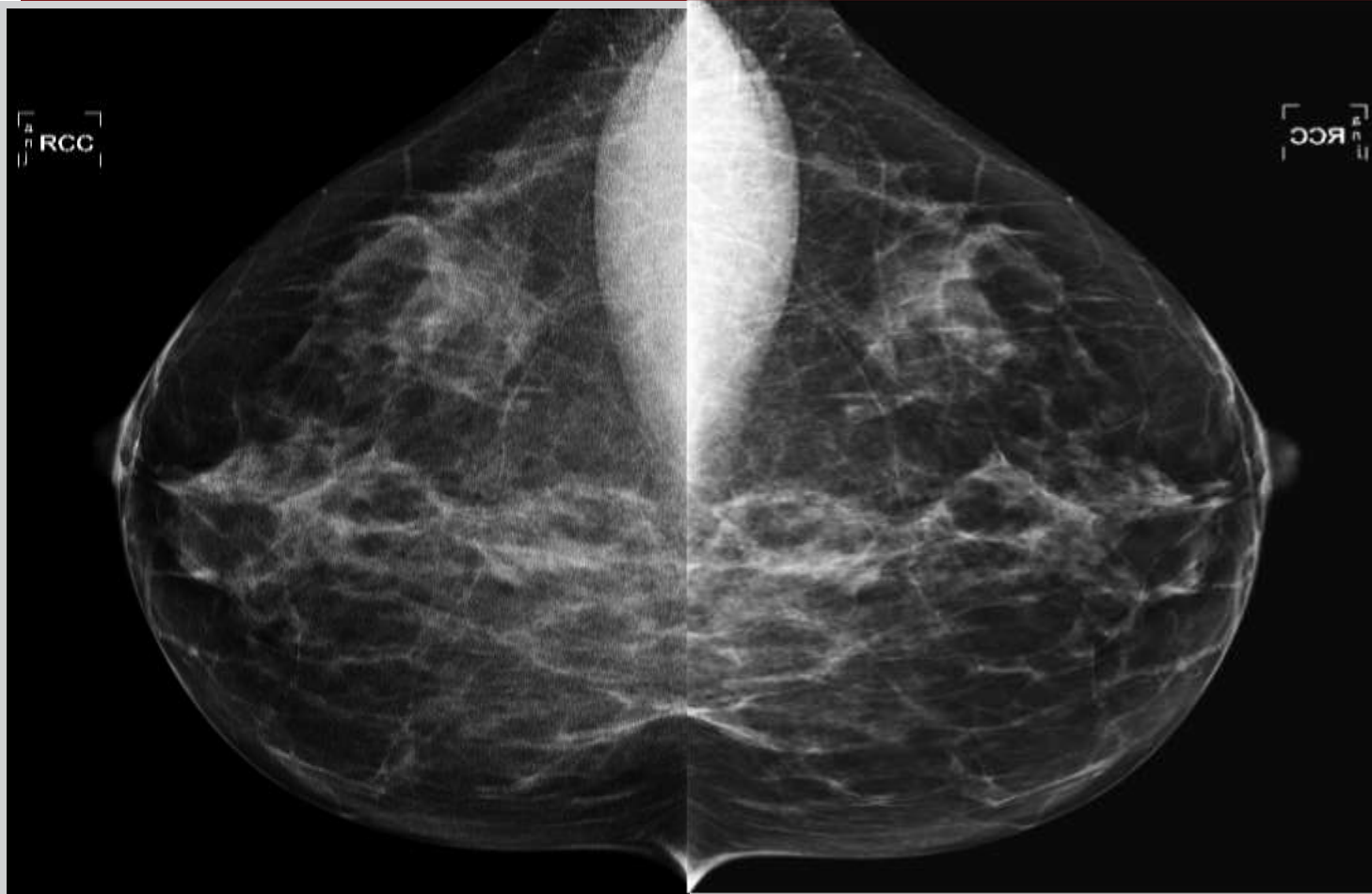
2014

kVp: 39  
Filter: Ag  
mAs: 35

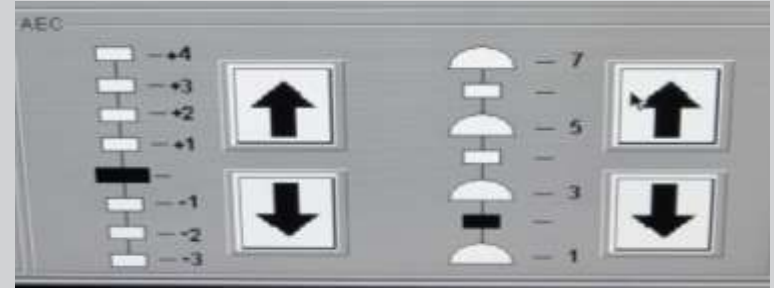
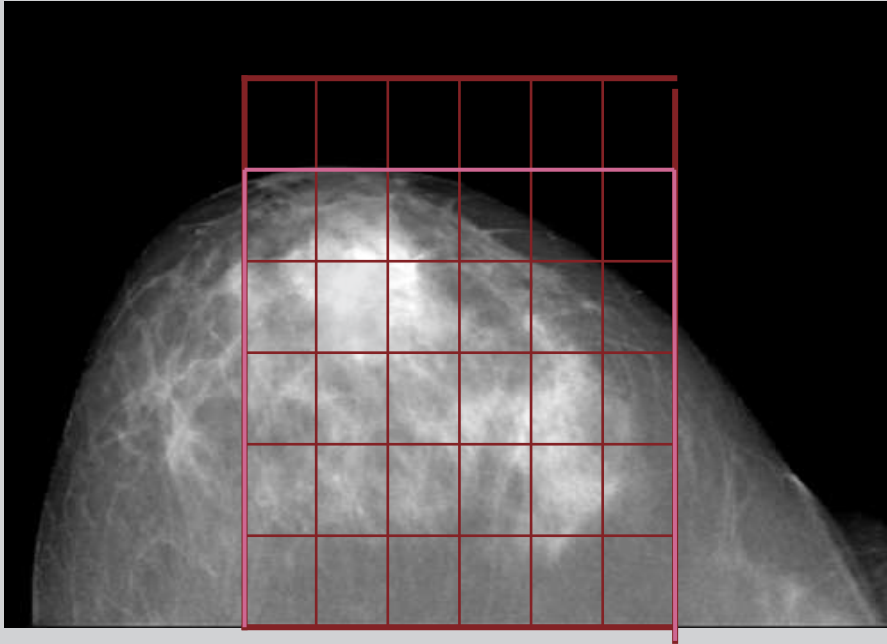
BPT: 126mm

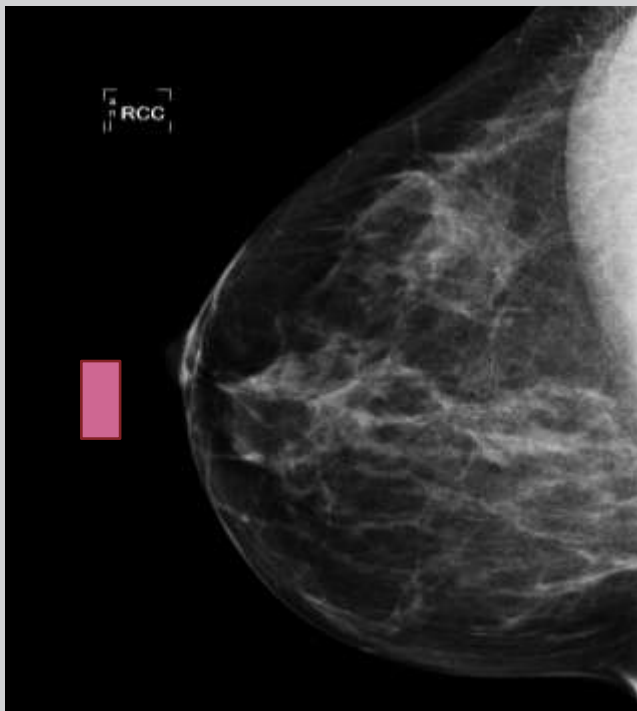


# Bedieningsfouten

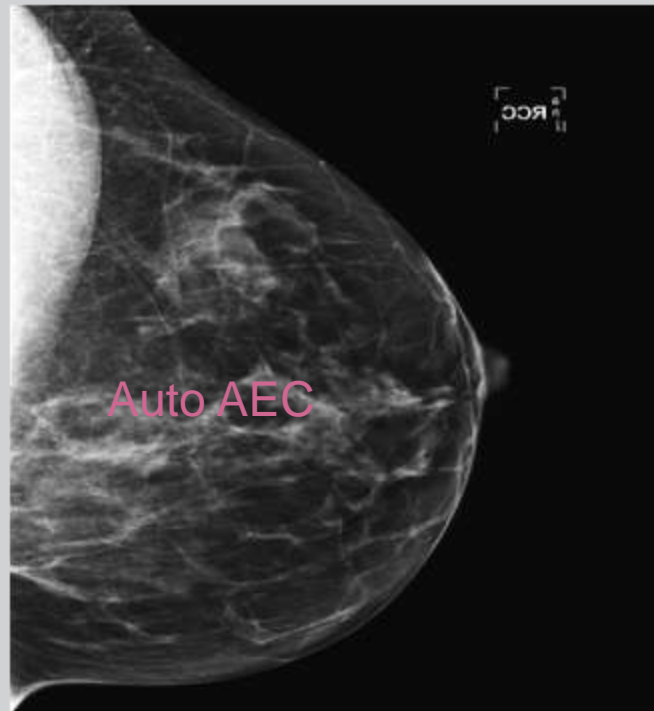








28 kV 29 mAs



29 kV 82 mAs

Oorzaak:

Meetcel keuze 7 i.p.v. Auto.

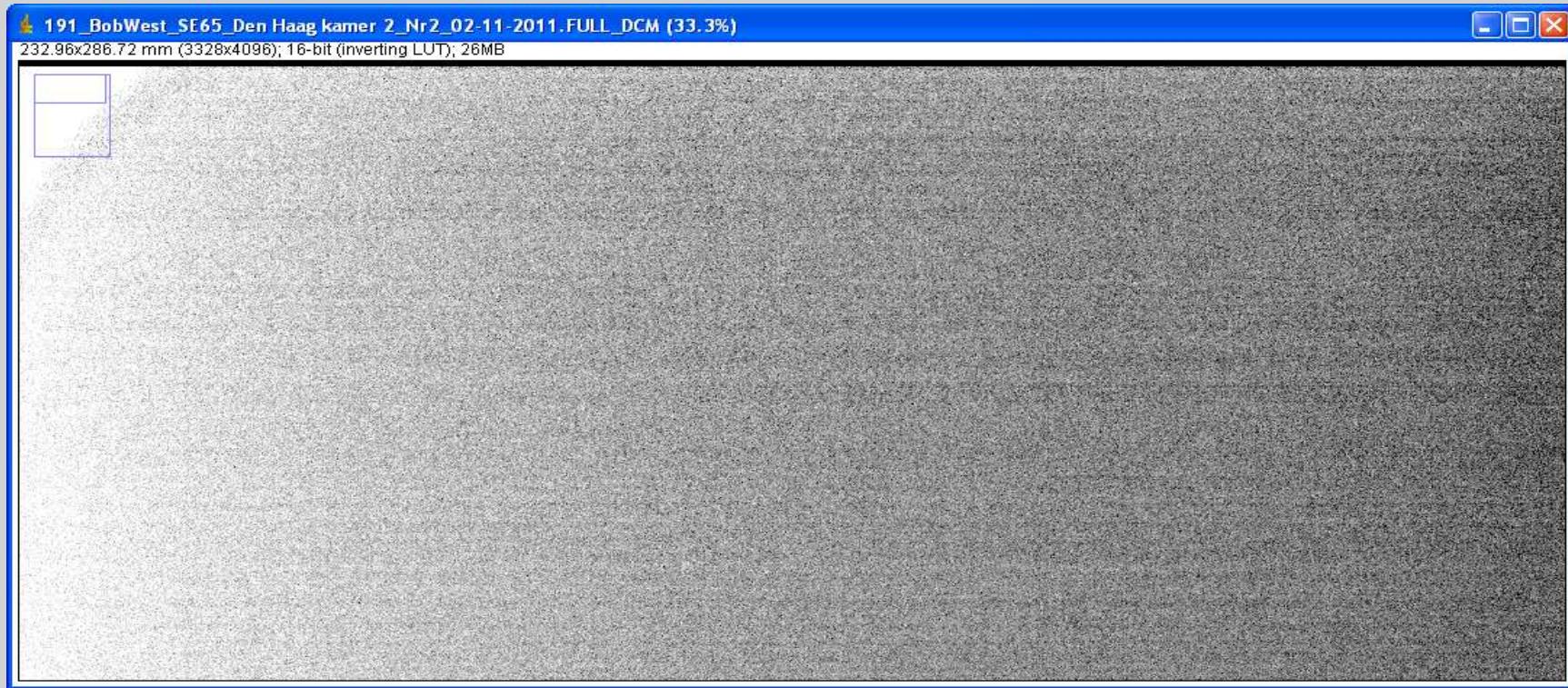
Oplossing:

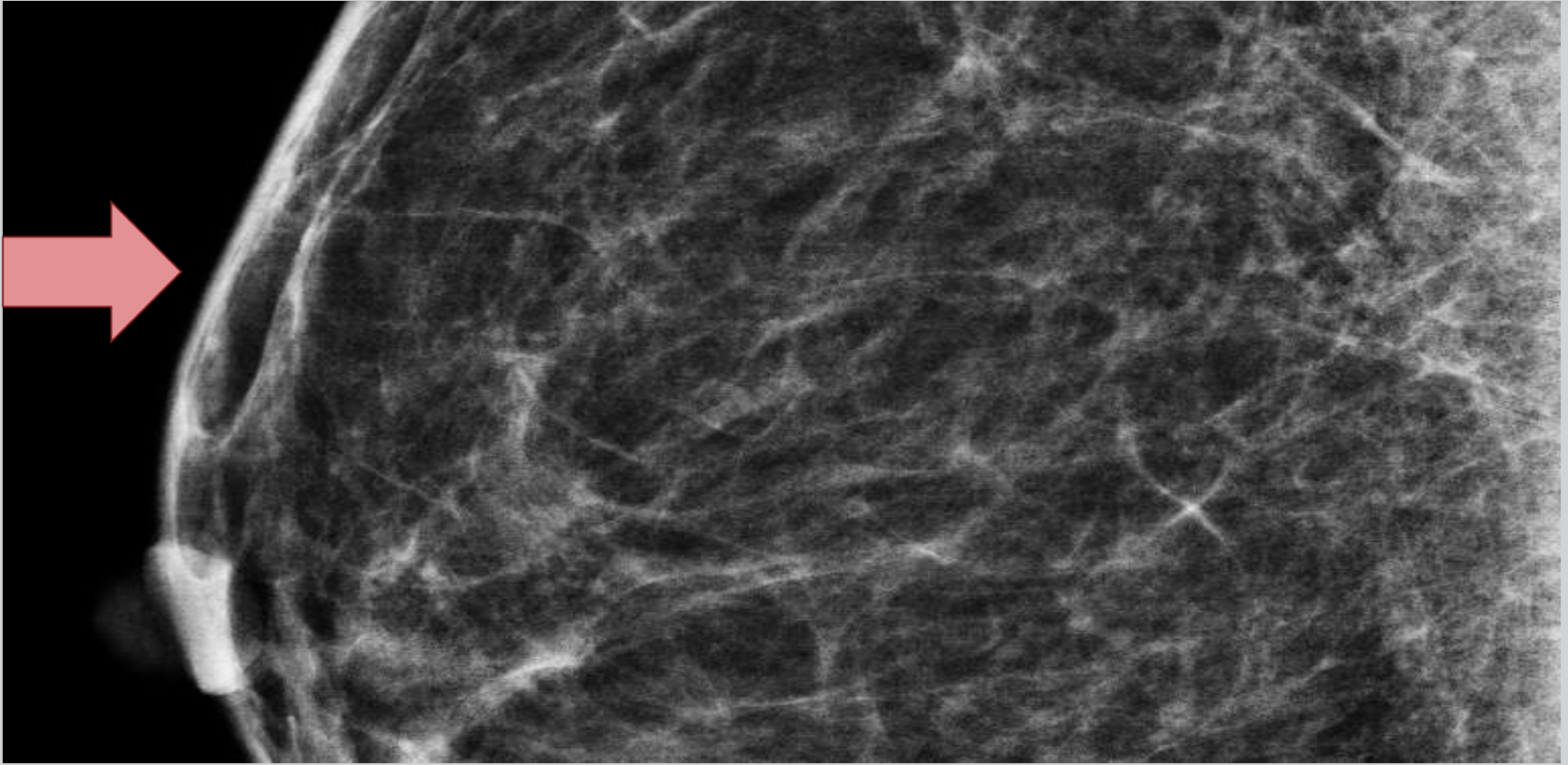
Meetcel keuze weer op Auto instellen.

LangeTermijn | Kwaliteitsopnamen

	opnamedatum	calibratiedatum (ff)	tijd	anode	filter	kV	mAs	MPV	SD	SNR	ROI coördinaten	det temp	d
▶	2-11-2011	2-11-2011	8:00:35	3	3	29	95.8	589.54	16.67	35.37	(2428,2005;2512,2090)	25.27	
	2-11-2011	21-10-2011	7:50:09	3	3	29	95.6	587.05	9.71	60.45	(2428,2005;2512,2090)	25.04	
	21-10-2011	21-10-2011	8:20:37	3	3	29	96.7	587.98	9.9	59.4	(2428,2005;2512,2090)	25.46	
	21-10-2011	12-10-2011	8:14:22	3	3	29	95.7	586.54	9.75	60.16	(2428,2005;2512,2090)	25.31	
	12-10-2011	12-10-2011	8:18:18	3	3	29	96.8	586.91	9.6	61.16	(2428,2005;2512,2090)	26.72	
	12-10-2011	1-10-2011	8:12:59	3	3	29	95.6	586.9	9.68	60.65	(2428,2005;2512,2090)	26.67	
	1-10-2011	1-10-2011	8:37:00	3	3	29	97.5	591.48	9.56	61.88	(2428,2005;2512,2090)	26.54	







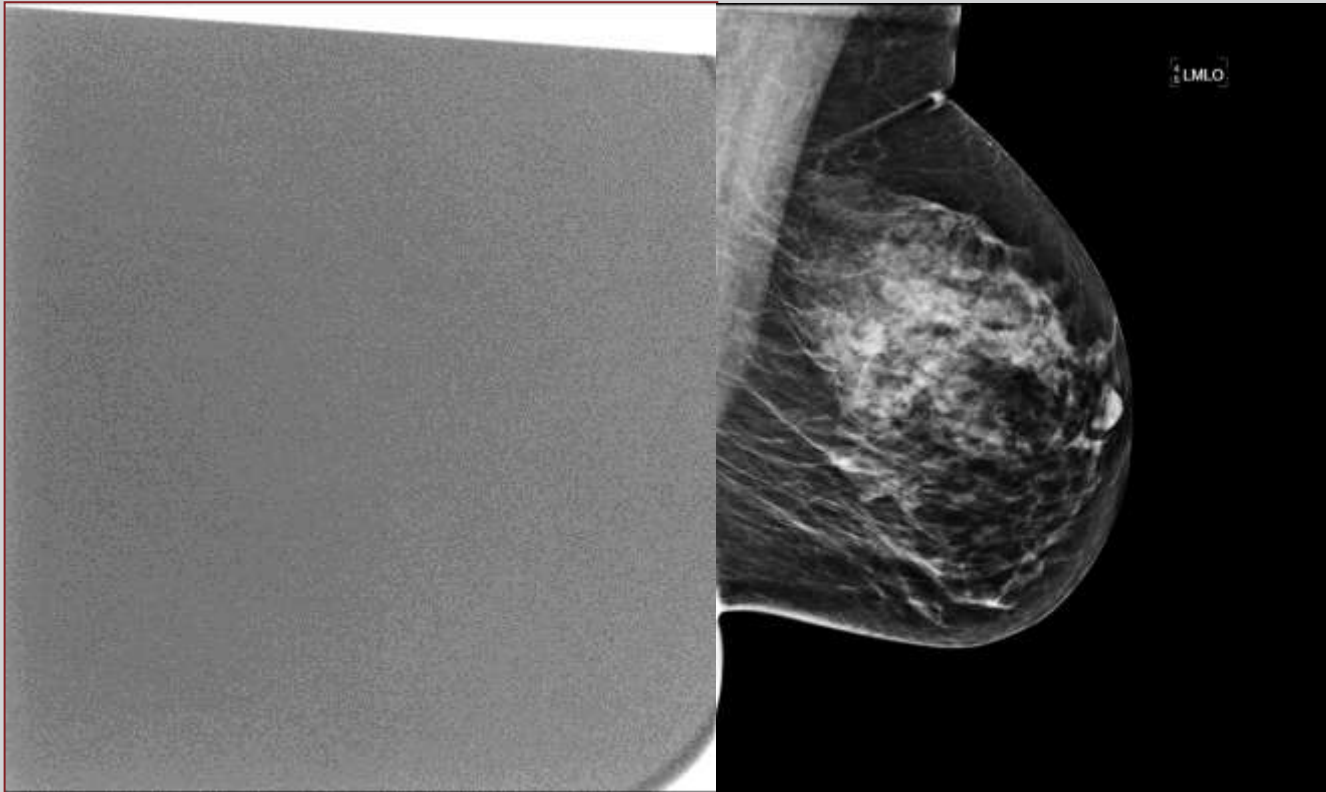


## Oorzaak:

Tijdens kalibratie ERROR melding. Systeem is gereset, kalibratie is mislukt.

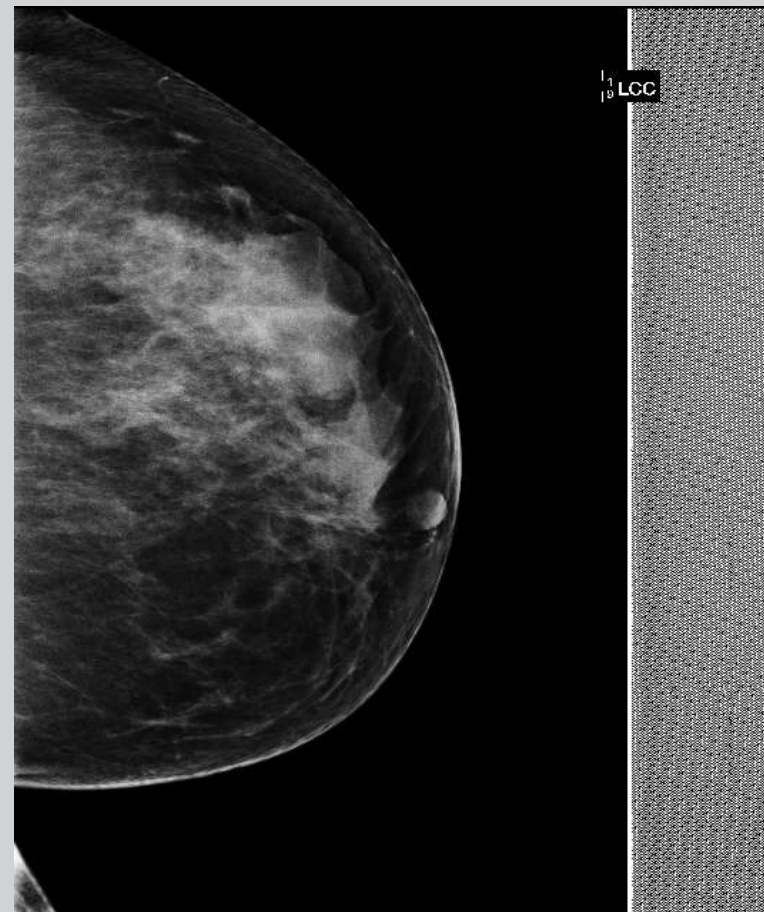
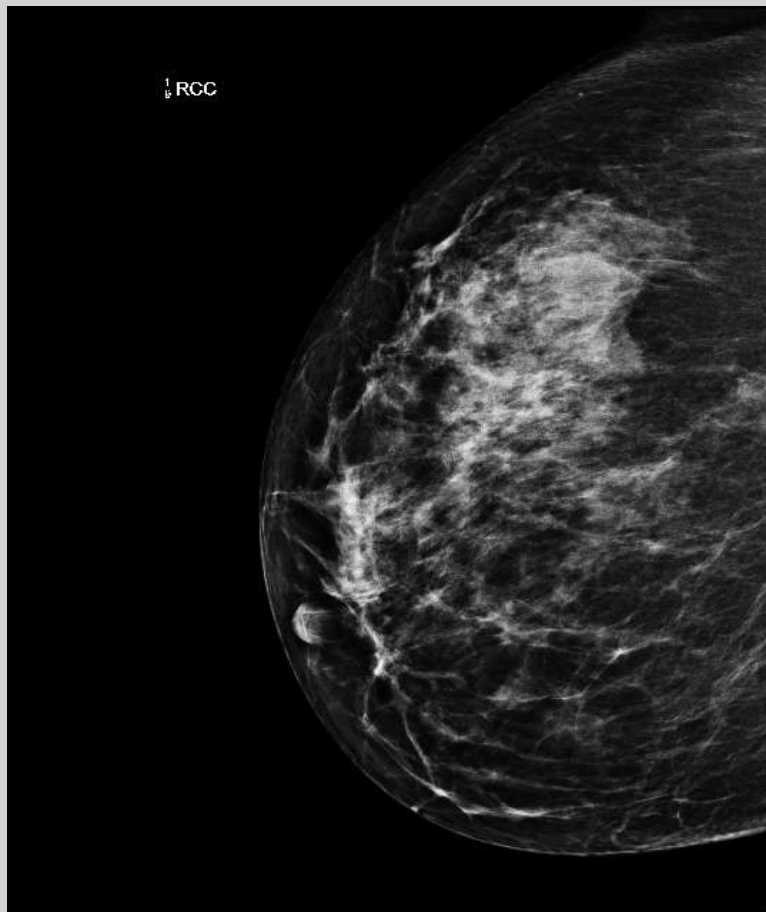
## Oplossing:

De laborantes vonden het 1<sup>e</sup> mammogram vreemd uitzien en zijn uitgeweken naar de andere kamer. Na herkalibratie in orde.

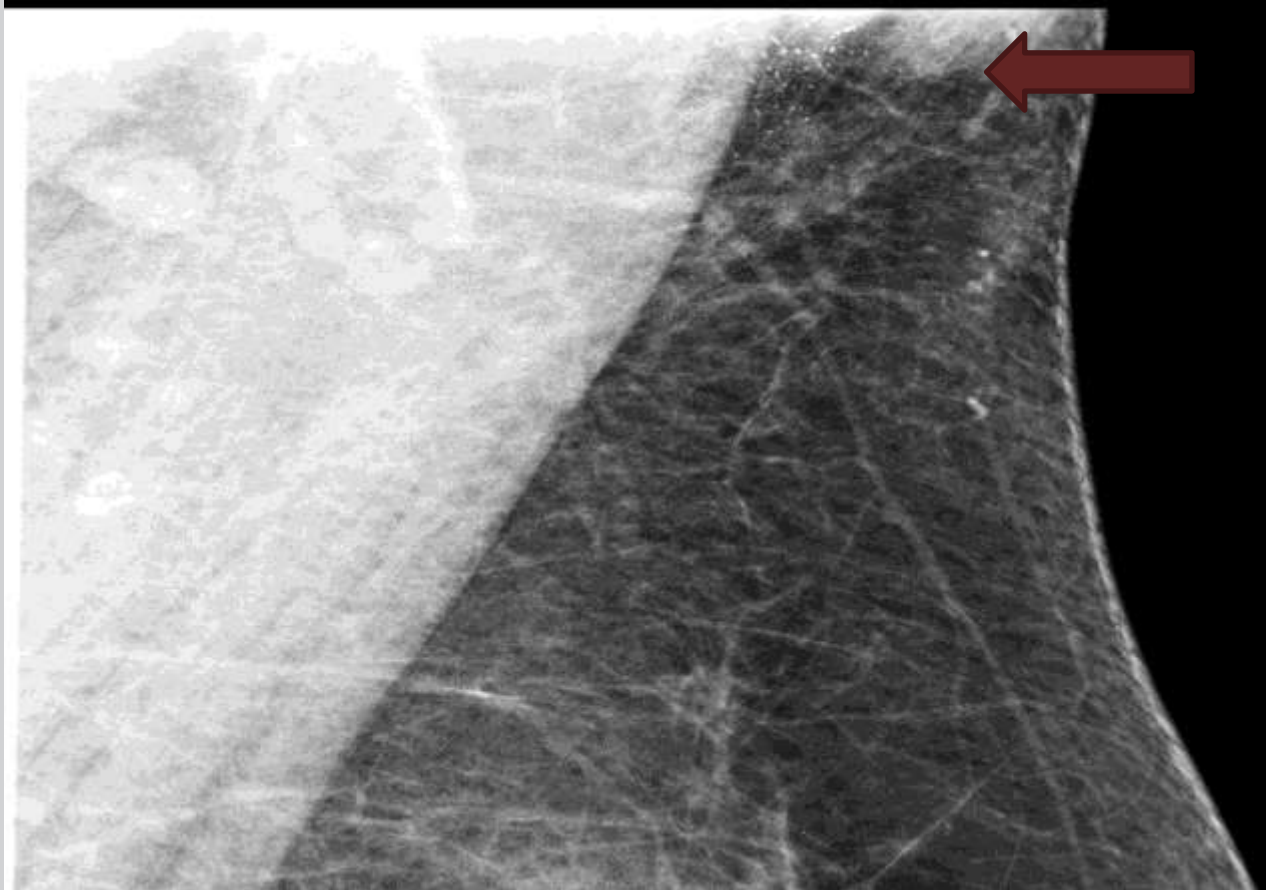


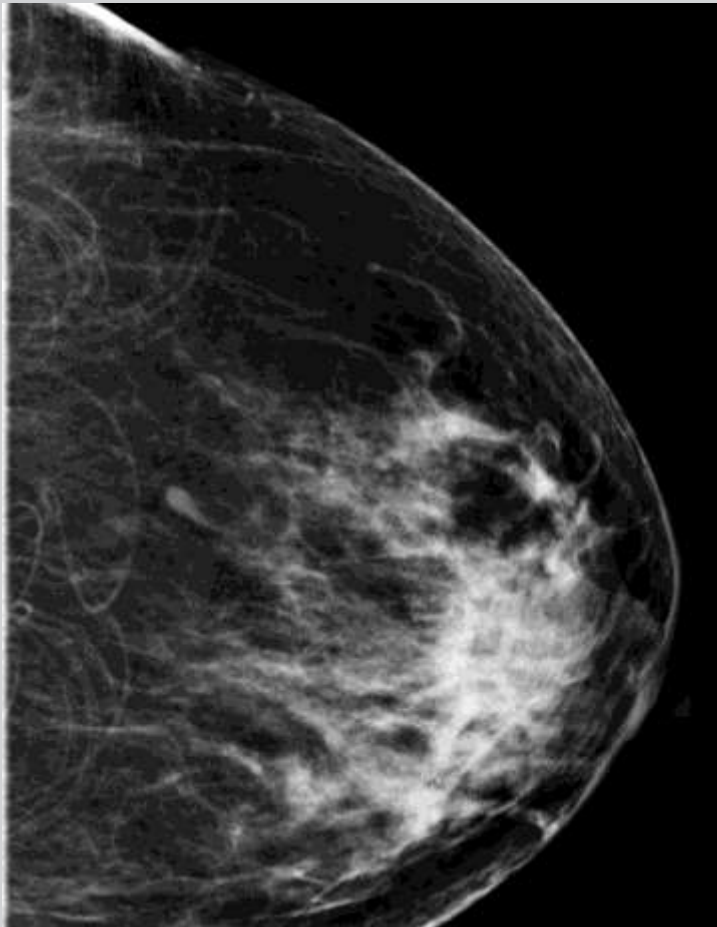


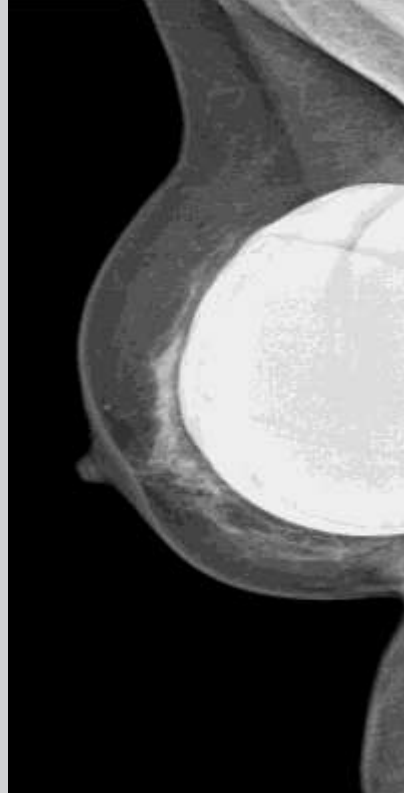
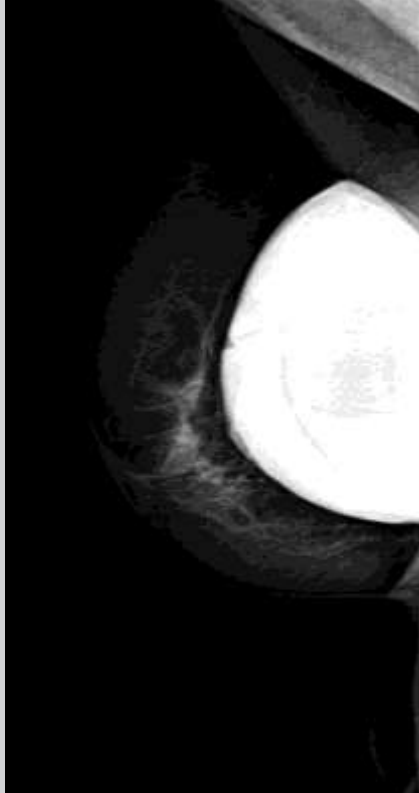
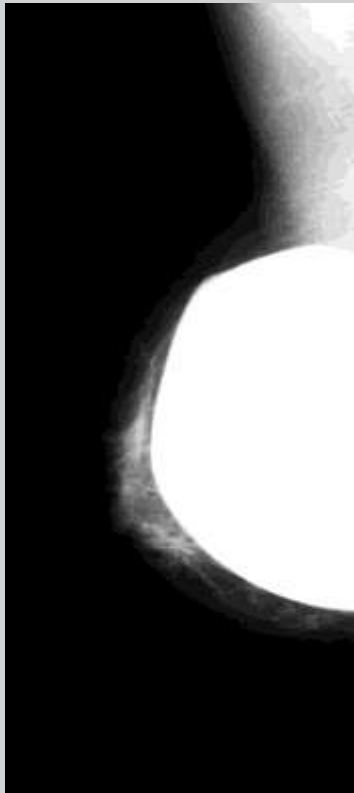




# Overige problemen







- Tenslotte:

Kwaliteit kan je alleen leveren als alle drie onderdelen aan de eisen voldoet.