



UNITY MINING

LAKESIDE PROSPECT
MINERAGRAPHY

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MODA
microscopy

McArthur Ore Deposit Assessments Pty Ltd

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UNITY MINING LTD

Lakeside Prospect, TAS

Drillcore Mineragraphy

February 2013

Method

Michael Blake (Contract Geologist, Unity Mining) requested a mineragraphic assessment of gold and base metal mineralisation from the Lakeside Prospect, near Tullah in Tasmania. 9 samples (see table below) were provided from 3 drillholes. Polished thin sections were prepared by Simon Stephens (Hobart, TAS) from each half-core sample (two for sample LSUD02 328.25m), with the offcuts submitted to ALS (Burnie, TAS) for assaying.

DDH	Downhole Depth m.
LSUD02	327.45
	327.60
	328.00
	328.25
	358.55
LSUD03	396.35
LSUD06A	218.85
	218.95
	219.20

The assessment was undertaken in two stages: quantitative logging and qualitative photographic mineragraphy.

The first logging scan was undertaken to quantify the gross mineralogical composition. This was achieved by using a 530µm circular mask centred on 100 grid points evenly distributed across the whole polished area of the slide. The area% of each mineral present within each 530µm circle was visually estimated.

To quantify the liberation and association characteristics of the “economic” minerals, a second scan was undertaken. For each polished section, up to 100 “grains” (centred on a random grid) containing any “economic” mineral (i.e. *chalcopyrite*, *sphalerite*, *galena*, *cassiterite*, *stannite*, *bismuthinite* or *native bismuth*) were logged across the slide using a 53µm circular mask to simulate a ~53µm grind. For each “grain” the area% of each mineral present was visually estimated. For this scan, the textural style of each grain was recorded to allow production of grain maps. These maps, arranged in increasing complexity sequence, allow ready comparison of the textural locking of the potentially economic minerals in each sample.

Three of the ten polished thin sections had visible gold (LSUD02 327.45, LSUD02 328.0m and LSUD03 396.35m). By scanning across the entire area of these polished thin sections, 275 gold grains were logged. X/Y location, grain size and minerals in contact with (or hosting) the gold were recorded.

About 10 representative photomicrographs were taken of each sample at various scales, to document the mineragraphic textures. These were annotated in PowerPoint format.

Overall Composition

Polished Section Offcut Assays

The sample offcuts when assayed by ALS gave the following results.

Sample	Auppm	Agppm	Cuppm	Pbppm	Znppm	Moppm	Bippm	As%	Sn%	WO3%	S%
LSUD02 327.45	15.05	20.6	6200	61	69	<1	835	5.36	0.17	0.01	17.7
LSUD02 327.60	2.50	7.0	3140	31	59	<1	113	>10	0.02	0.01	8.61
LSUD02 328.00	9.91	8.8	2810	39	90	<1	120	0.25	0.04	<0.01	13.8
LSUD02 328.25	3.04	36.3	7520	3680	3460	<1	171	6.91	0.84	0.01	13.6
LSUD02 358.55	0.51	4.2	268	403	1970	4	17	0.05	0.02	<0.01	3.93
LSUD03 396.35	3.55	2.9	882	148	160	<1	32	0.18	0.06	0.01	6.79
LSUD06A 218.85	1.69	334	6570	8100	185	<1	789	3.49	3.62	0.02	22.7
LSUD06A 218.95	11.00	46.9	7030	1525	497	<1	166	>10	0.16	0.02	28.1
LSUD06A 219.20	7.01	57	4280	1650	597	<1	298	>10	0.99	0.02	14.45

Quantitative Optical Microscopy

The minerals routinely logged during the 530µm and 53µm scans across each polished thin section were as follows (in descending order of abundance):

- Qz *Quartz* SiO₂
- Py *Pyrite* FeS₂
- As *Arsenopyrite* FeAsS
- Po *Pyrrhotite* Fe_{1-x}S
- Cl *Chlorite* (Mg,Fe)₅Si₃Al₂O₁₀(OH)₈
- Mu *Muscovite* KSi₃Al₃O₁₀(OH,F)₂
- Cp *Chalcopyrite* CuFeS₂
- Sp *Sphalerite* (Zn,Fe)S
- Cs *Cassiterite* SnO₂
- Co *Carbonate* (Ca,Mg,Fe)CO₃
- St *Stannite* Cu₂FeSnS₄
- Ma *Marcasite* FeS₂
- Gn *Galena* PbS
- Bm *Bismuthinite* Bi₂S₃
- Bi *Native Bismuth* Bi
- Ru *Rutile* TiO₂
- Mt *Magnetite* Fe₃O₄
- Au *Electrum* (Au,Ag)

The mineral compositions tallied from the 530µm circular mask quantitative optical microscopy scans are summarised below.

Optical Microscopy 530µm Circular Mask Composition (weight%)

Sample	Py	As	Po	Cp	Sp	Cs	St	Ma	Gn	Bm	Bi	Qz	Cl	Mu	Co	Ru
LSUD02 327.45	25.7	24.3	35.3	1.5	0.0	Tr	Tr	0.2	0.0	Tr	0.1	7.1	0.0	0.9	4.7	0.0
LSUD02 327.60	1.9	53.1	0.1	0.4	Tr	Tr	Tr	0.0	0.0	0.0	0.0	34.8	7.7	1.3	0.5	0.1
LSUD02 328.00	2.4	0.0	10.9	4.5	Tr	Tr	Tr	Tr	0.0	Tr	0.0	56.1	22.8	3.1	0.0	Tr
LSUD02 328.25A	41.8	20.6	1.4	1.8	2.7	0.0	2.1	0.0	0.1	Tr	Tr	16.8	11.8	1.0	0.0	Tr
LSUD02 328.25B	7.2	13.7	0.6	1.2	0.1	0.0	0.6	0.0	Tr	0.0	0.0	59.2	14.9	1.1	1.4	Tr
LSUD02 358.55	10.1	0.0	0.0	Tr	2.2	0.0	0.0	0.0	0.1	0.0	0.0	58.4	2.2	27.1	0.0	0.0
LSUD03 396.35	Tr	0.0	19.6	0.3	Tr	Tr	Tr	0.1	0.0	0.1	Tr	66.0	5.8	8.1	0.0	Tr
LSUD06A 218.85	39.9	6.2	0.0	1.5	0.0	3.3	0.0	0.0	Tr	Tr	0.0	25.3	12.2	11.3	0.2	Tr
LSUD06A 218.95	46.8	42.5	0.0	1.9	Tr	Tr	Tr	0.0	Tr	0.0	0.0	8.5	0.1	0.2	0.0	0.0
LSUD06A 219.20	38.8	40.9	0.0	1.6	0.0	Tr	0.1	0.0	0.0	0.0	0.0	17.1	0.1	1.3	0.2	0.0
MEAN	21.1	20.5	7.4	1.5	0.4	0.4	0.2	Tr	Tr	Tr	Tr	34.6	7.1	6.0	0.7	Tr

Py=pyrite, As=arsenopyrite, Po=pyrrhotite, Cp=chalcopyrite, Sp=sphalerite, Cs=cassiterite, St=stannite, Ma=marcasite, Gn=galena, Bm=bismuthinite, Bi=native bismuth, Qz=quartz, Cl=chlorite, Mu=muscovite, Co=carbonate, Ru=rutile

Note: in some samples the muscovite and chlorite were very fine-grained and may have been mis-identified.

For the “economic” scans using a 53µm circular mask, the following compositions were tallied. Note that only those circular areas containing *chalcopyrite*, *sphalerite*, *galena*, *cassiterite*, *stannite*, *bismuthinite* or *native bismuth* were logged – barren 53µm areas were excluded.

Optical Microscopy 53µm Circular Mask Cu-Sn-Zn-Pb-Bi SCAN Composition (weight%)

Sample	Py	As	Po	Cp	Sp	Cs	St	Ma	Gn	Bm	Bi	Qz	Cl	Mu	Co	Ru
LSUD02 327.45	15.6	54.0	2.2	9.2	0.0	0.2	0.1	0.0	0.0	1.0	0.9	7.4	0.0	0.9	9.0	0.0
LSUD02 327.60	5.1	52.7	0.4	13.3	0.1	0.6	Tr	0.0	0.0	0.0	0.0	17.7	5.0	1.4	3.7	Tr
LSUD02 328.00	0.6	0.0	11.3	32.9	0.1	Tr	Tr	0.1	0.0	0.1	0.0	22.9	27.6	3.9	0.1	0.2
LSUD02 328.25A	29.6	15.2	2.4	10.7	8.7	0.0	5.0	0.8	1.5	0.9	Tr	10.4	14.7	0.0	0.0	0.0
LSUD02 328.25B	8.9	19.9	4.0	9.6	0.9	0.0	6.3	0.7	1.3	0.0	0.0	25.6	16.8	2.7	3.2	0.0
LSUD02 358.55	13.1	0.0	0.0	7.1	65.4	0.0	0.0	0.0	0.8	0.0	0.0	12.6	0.5	0.5	0.0	0.0
LSUD03 396.35	0.0	0.0	35.3	14.5	0.1	0.7	4.0	0.0	0.0	8.8	0.1	18.8	17.3	0.6	0.0	0.0
LSUD06A 218.85	48.1	9.0	0.0	6.0	0.0	12.0	0.0	0.0	1.1	0.1	0.0	9.7	12.9	1.2	0.0	0.1
LSUD06A 218.95	47.0	33.0	0.0	10.4	0.1	0.1	0.1	0.0	0.3	0.0	0.0	8.9	0.0	0.1	Tr	0.0
LSUD06A 219.20	37.8	33.2	0.0	8.2	0.0	1.3	Tr	0.0	0.0	0.0	0.0	15.9	0.1	0.8	0.1	0.0
MEAN	20.6	21.7	5.6	12.2	7.5	1.5	1.6	0.2	0.5	1.1	0.1	15.0	9.5	1.2	1.6	Tr

Liberation parameters

The liberation of the potentially “economic” minerals at 53µm was extremely low.

53µm circular areas – Mineral Liberation% (all samples averaged)

Mineral	Liberated	Binary	Ternary	Quaternary+
Chalcopyrite	3	25	39	33
Sphalerite	26	14	18	42
Galena	0	42	16	42
Cassiterite	0	14	57	30
Stannite	0	0	13	87
Bismuthinite	0	31	24	45
Native bismuth	0	24	24	52

Note: the sphalerite liberation is high in only one sample (LSUD02 358.55m)

Effective liberation of the “economic” minerals would require an extremely fine grind.

Association parameters

Association of the “economic” minerals is summarised below. This table is read as follows: e.g. take *chalcopyrite* (Cp) as an example. Reading across, we see that 8% of all the *chalcopyrite* has *sphalerite* (Sp) in the same 53µm circular area. However, we also note in the row below that 68% of the *sphalerite* (Sp) occurs with *chalcopyrite* (Cp).

53µm circular areas – Mineral Association% (all samples averaged)

	Cp	Sp	Gn	Cs	St	Bm	Bi	Py	Ma	Po	As	Ga
Cp		8	4	3	9	0	0	31	1	23	27	82
Sp	68		4	0	23	2	1	24	0	14	9	56
Gn	36	14		2	13	0	0	82	7	10	11	49
Cs	34	0	5		1	0	0	58	0	1	18	96
St	89	61	12	4		0	0	31	3	1	21	98
Bm	26	11	0	0	0		20	17	0	19	9	100
Bi	17	14	0	0	0	49		49	0	29	21	73

The strong mineral associations are:

- *stannite-chalcopyrite*
- *galena-pyrite*
- *sphalerite-chalcopyrite*
- *stannite-sphalerite*
- *cassiterite-pyrite*
- *native bismuth-bismuthinite*

The mineral associations listed above are commonly seen in other deposits.

Gold (*electrum*) Occurrences

Three of the ten polished thin sections contained readily visible gold by extensive searching with the 20x microscope objective.

Sample	Visible Gold?	Offcut assay Au ppm
LSUD02 327.45	YES	15.05
LSUD02 327.60	no	2.50
LSUD02 328.00	YES	9.91
LSUD02 328.25A	no	3.04
LSUD02 328.25B	no	3.04
LSUD02 358.55	no	0.51
LSUD03 396.35	YES	3.55
LSUD06A 218.85	no	1.69
LSUD06A 218.95	no	11.00
LSUD06A 219.20	no	7.01

Detailed logging of electrum grains in these three samples is summarised below:

Sample	# electrum grains	Total area μm^2	Mean diameter μm	Median diameter μm
LSUD02 327.45	57	11802	16.4	13.0
LSUD02 328.00	117	4448	6.9	5.5
LSUD03 396.35	101	5037	7.9	4.5
TOTAL	275	21287	9.9	4.5

The vast majority of the *electrum* grains are very simple in shape (spherical to elliptical), although a few of the larger grains are irregularly-shaped. The *electrum* grainsizes are strongly log-normally distributed, with an abundance of small grains and only a few large grains (hence mean diameter >> median diameter).

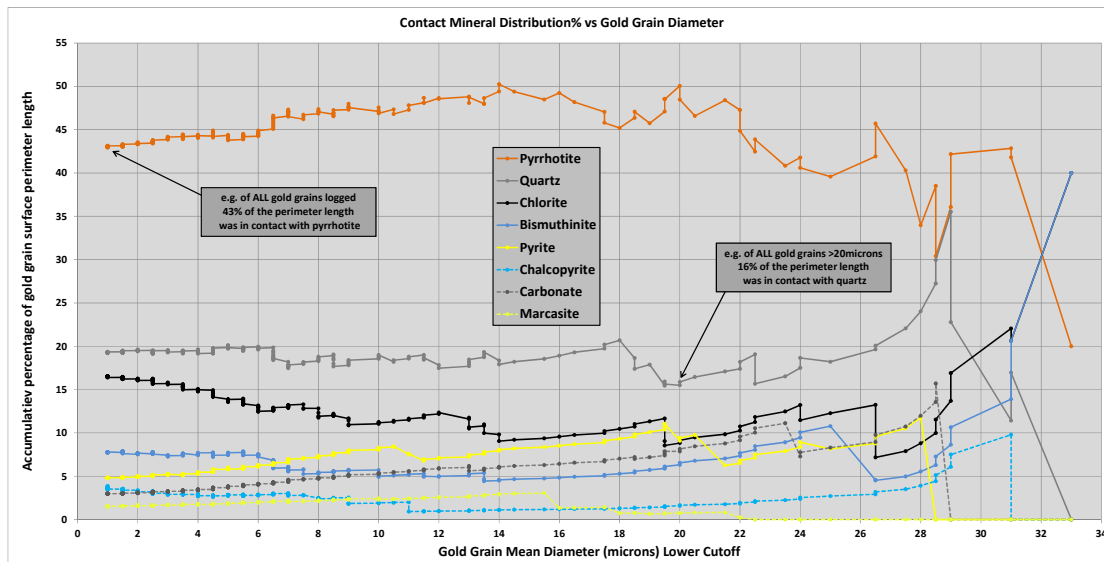
The minerals sharing a common boundary (i.e. in contact) with the *electrum* are (in decreasing amount): *pyrrhotite*, *quartz*, *chlorite*, *bismuthinite*, *pyrite*, *chalcopyrite*, *carbonate* and *marcasite*. It is most unusual that *arsenopyrite* is not included in this list. The different hosts contain different size *electrum* grains.

Dominant Host	# electrum grains	Total area μm^2	Mean diameter μm	Median diameter μm
Pyrrhotite	115	10621.4	10.8	5.0
Quartz	48	3681.8	9.9	5.5
Chlorite	54	2951.1	8.3	3.5
Pyrite	5	1426.1	19.1	19.5
Bismuthinite	24	890.6	6.9	4.5
Chalcopyrite	23	336.2	4.3	2.0

The proportion of the *electrum* grain perimeters in contact with the other minerals is tallied below:

Mineral	% of <i>electrum</i> perimeter length
Pyrrhotite	42.9
Quartz	19.2
Chlorite	16.5
Bismuthinite	7.7
Pyrite	4.5
Chalcopyrite	3.8
Carbonate	3.0
Marcasite	1.5
Cassiterite	0.3
Stannite	0.3
Muscovite	0.2
Sphalerite	Tr
Rutile	Tr

There is a clear preference for *electrum* to be spatially associated with *pyrrhotite* which could possibly be utilised to high-grade a feed by simple magnetic separation. A simple calculation based on just these samples shows that the *pyrrhotite*, comprising 7% of the ore and hosting 43% of the gold, could potentially upgrade the 6 ppm Au ore to a grade of 35 ppm Au.



Plot of electrum grain diameter (descending accumulative) versus percentage of the electrum perimeter in contact with other minerals (see text boxes for example explanation)

The lack of visible gold (*electrum*) associated with *arsenopyrite* is very unusual, as most Tasmanian deposits show an arsenic-gold correlation. It should also be noted that samples LSUD06A 218.95/219.20m with offcut assays of 11ppm and 7ppm Au showed no visible gold. The author suggests that the Au in these samples is likely to be resident in *arsenopyrite* and *pyrite* as sub-microscopic (possibly refractory) gold that would require microanalysis (e.g. Laser Ablation ICP-MS) to quantify.

Microtexture Classification

The microtextures of the “economic” minerals have been classified and semi-quantified. These are tabulated below in decreasing sequence with reference to a photomicrograph which contains an example of each microtexture.

Chalcopyrite Microtextures

Texture	%Prevalence	Description	Associates	Photo
CpA	45	Coarse remobilised segregations in Qz/Cl with Po	Qz Po St Sp	LSUD02 328.00 c
CpB	20-25	Interstitial to shattered As/Py, with Po rims	Po Qz	LSUD02 328.00 m
CpC	15	Infillings in cataclased Py/As	Py/As	LSUD06A 219.20 g
CpD	5	Ragged grains in late cross-cutting veinlets with Co	Co	LSUD02 327.60 g
CpE	1-5	Blebs in Po	Po	LSUD02 328.00 k
CpF	1-5	Narrow rims on St grains	St Cl	LSUD02 328.25A r
CpG	1-5	Filling fine cracks in As	As	LSUD02 327.45 o
CpH	1	Reworked rounded grains in polyminerallc infills	Sp St As Py Qz	LSUD02 328.25A c
CpI	1	Narrow rims on Sp grains	Sp St	LSUD02 328.25A h
CpJ	<1	Disease in Sp	Sp	LSUD02 358.55 g
CpK	<1	Fine rims on Cs	Cs Cl	LSUD06A 218.85 c

Sphalerite Microtextures

Texture	%Prevalence	Description	Associates	Photo
SpA	80	Remobilised infills in Qz	Qz Cp	LSUD02 358.55 a
SpB	10	Coarse aggregates with St, interstitial to shattered Py	St Cp Gn Cl Py	LSUD02 328.25A g
SpC	5	Irregular inclusions in St, often near margin	St Cp	LSUD06A 219.20 m
SpD	1-5	Small grains in Cp	Cp St	LSUD02 328.00 i
SpE	1-5	Reworked rounded grains in polyminerallc infills	Sp St As Py Qz	LSUD02 328.25A d
SpF	<1	Filling interstices in shattered As	As Cp	LSUD06A 218.85 h

Cassiterite Microtextures

Texture	%Prevalence	Description	Associates	Photo
CsA	35-40	Granular aggregates filling interstices in As with Qz/Cl	Qz Cl	LSUD02 327.45 k
CsB	30-35	Granular aggregates filling interstices in Qz with Cl	Cl Qz	LSUD06A 218.85 c
CsC	10	Grains in Py	Py	LSUD06A 218.85 g
CsD	10	Reworked rounded grains in polyminerallic infills	As Py Qz	LSUD06A 218.85 k
CsE	5	Irregular intergrowths with remobilised Cp/Sp	Cp Sp	LSUD06A 219.20 n
CsF	1-5	Grains in Po with Qz	Po St	LSUD03 396.25 k

Stannite Microtextures

Texture	%Prevalence	Description	Associates	Photo
StA	40	Coarse remobilised segregations in Qz/Cl with Cp	Qz Cp Po	LSUD03 396.25 e
StB	20	Irregular blebs in Sp	Sp Cl	LSUD02 328.25A g
StC	10	Blebs on the margin of Po	Po	LSUD02 327.45 r
StD	5-10	Irregular interstitial to Cl	Cl Cp	LSUD02 328.25A l
StE	5	Irregular blebs in Cp	Cp	LSUD06A 218.95 g
StF	1-5	Reworked rounded grains in polyminerallic infills	Sp Cp As Py Qz	LSUD02 328.25A c
StG	1-5	Infillings in cataclased Py/As	Py As Cp	LSUD02 328.25A j
StH	1-5	Late cross-cutting veinlets with Cp/Sp	Cp Sp	LSUD02 328.25A m

Galena Microtextures

Texture	%Prevalence	Description	Associates	Photo
GnA	40	Zonal blebs in Py	Py	LSUD06A 218.85 l
GnB	35-40	Irregular grains with interstitial Sp	Sp Cp Cl	LSUD02 328.25A q
GnC	15	Blebs in Cp	Cp	LSUD06A 218.85 d
GnD	5	Filling small interstices in Py aggregates	Py	LSUD02 358.55 f

Bismuthinite Microtextures

Texture	%Prevalence	Description	Associates	Photo
BmA	45-50	Irregular interstitial fillings in Po	Po Bi	LSUD03 396.25 g
BmB	45-50	Ragged inclusions in Qz/Cl	Qz Cl Bi	LSUD02 327.45 p
BmC	1-5	Blebs in Cp	Cp Bi	LSUD02 327.45 o
BmD	1-5	Elongate flames in Co	Co	LSUD02 327.45 u

Native Bismuth Microtextures

Texture	%Prevalence	Description	Associates	Photo
BiA	85	Blebs in Bm	Bm Po	LSUD03 396.25 g
BiB	15	Blebs in Cp	Cp	LSUD02 327.45 o
BiC	<1	Blebs in Po	Po	LSUD02 328.00 n

The occurrence of Au with Sn is uncommon in Tasmania, and there is textural evidence suggesting that the Lakeside Sn, presumably introduced during Devonian metasomatism, has been superimposed over a pre-existing Cambrian VHMS deposit, simultaneously remobilising Cu-Zn-Pb.

Much of the massive *pyrite* and *arsenopyrite* is shattered and locally cataclased in microfaults and shears. This cataclasis in some samples has rounded the shattered grains and mixed them into polyminerallic epiclastics. This cataclasis appears to be later than the Devonian metasomatism and remobilisation.

The latest event appears to be filling of cracks by *carbonate* and minor *pyrite*.

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22.2.13

**QUANTITATIVE 530 μ m/53 μ m
MINERALOGY**

53 μ m GRAIN MAPS

and

**DETAILED MINERAGRAPHY
PHOTOMICROGRAPHS**

Sample Scan

Offcut Assay

0.62%Cu, 61ppmPb, 69ppmZn, 835ppmBi, 5.36%As, 0.17%Sn, 17.7%S, 15.05ppmAu



Image width ~115mm

DDH LSUD02 327.45m

Unity Mining Ltd - Lakeside Drillcore Mineralogy

Sample DDH LSUD02 327.45m

GJMcA 7.2.13

Total Scan Data - 530µm Mask

Average composition																			
	Cp	Sp	Gn	Cs	St	Bm	Bi	Py	Me	Ma	Po	As	Qz	Cl	Co	Mu	Ru	Cy	Other
Vol%	1.7	0.0	0.0	0.0	0.0	0.0	0.0	18.1	5.4	0.2	35.1	18.4	12.4	0.0	7.1	1.5	0.0	0.0	0.0
Wt%	1.5	0.0	0.0	0.0	0.0	0.0	0.1	19.8	5.9	0.2	35.3	24.3	7.1	0.0	4.7	0.9	0.0	0.0	0.0

ASSAYS										ppm
SG	%Cu	%Pb	%Zn	%As	%Sn	%Bi	%Fe	Au		
4.58	0.53	0.00	0.00	11.2	0.04	0.11	43.7			
	0.62	0.01	0.01	5.36	0.17	0.08		15.1		

Mineral Abbreviations			
Cp	Chalcopyrite	Ma	Marcasite
Sp	Sphalerite	Po	Pyrrhotite
Gn	Galena	As	Arsenopyrite
Cs	Cassiterite	Qz	Quartz
St	Stannite	Cl	Chlorite
Bm	Bismuthinite	Co	Carbonate
Bi	Native Bismuth	Mu	Muscovite
Py	Pyrite	Ru	Rutile
Me	Melnikovite	Cy	Clay

Economic Mineral Scan Data - 53µm Mask

COMPOSITE PROPORTIONS							
	Cp	Sp	Gn	Cs	St	Bm	Bi
Mono	10	0	0	0	0	0	0
Binary	14	0	0	0	0	7	33
Ternary	51	0	0	67	0	26	33
Quat.y+	25	0	0	33	100	67	33

BINARY ASSOCIATION MATRIX													
	Cp	Sp	Gn	Cs	St	Bm	Bi	Py	Me	Ma	Po	As	Ga
Cp		0	0	0	0	0	0	2	0	0	0	5	7
Sp	0		0	0	0	0	0	0	0	0	0	0	0
Gn	0	0		0	0	0	0	0	0	0	0	0	0
Cs	0	0	0		0	0	0	0	0	0	0	0	0
St	0	0	0	0		0	0	0	0	0	0	0	0
Bm	0	0	0	0	0		0	0	0	0	0	0	7
Bi	0	0	0	0	0	0		33	0	0	0	0	0

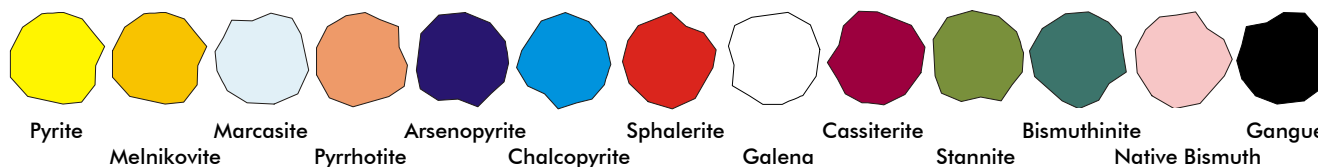
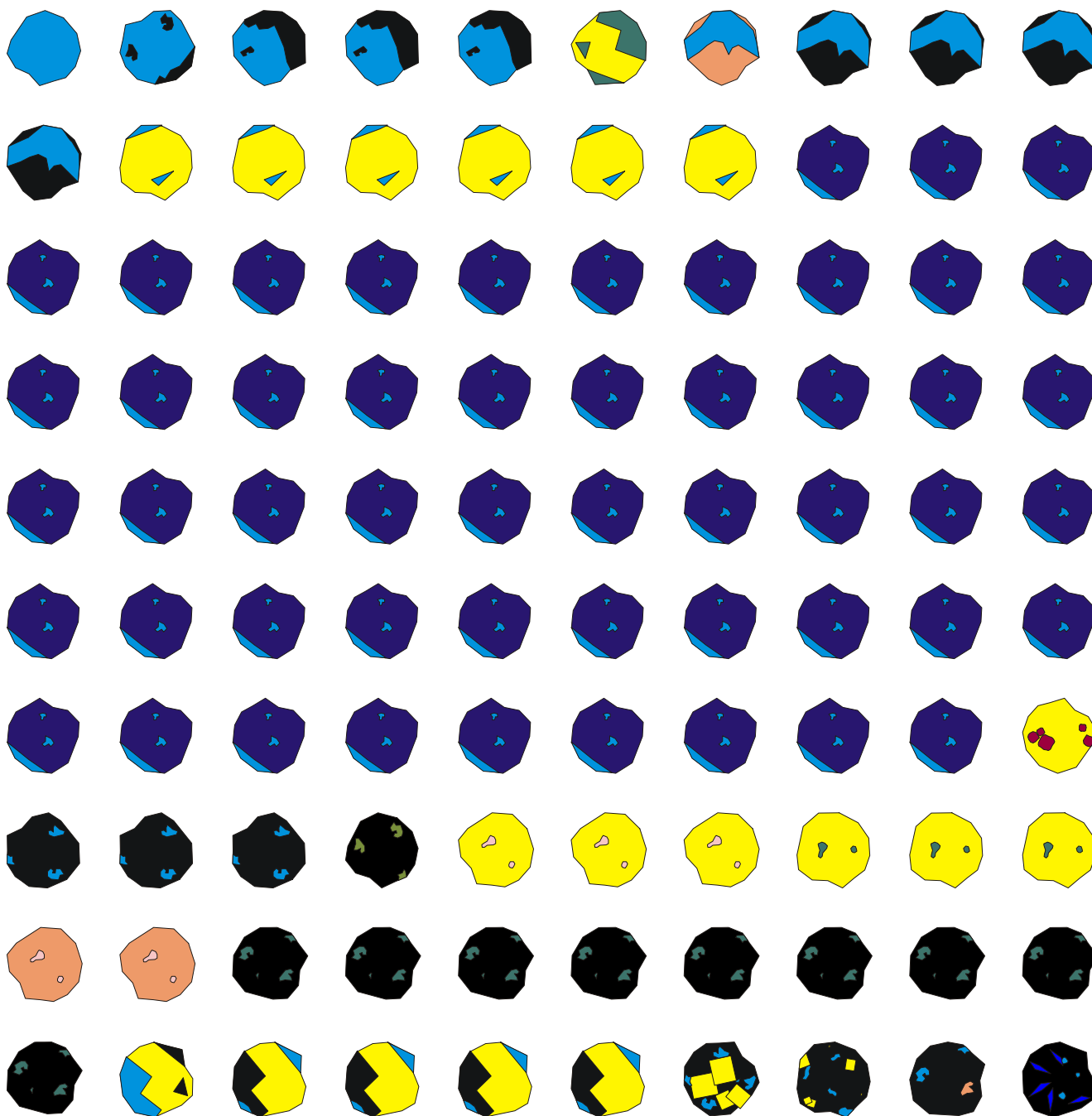
TOTAL ASSOCIATION MATRIX													
	Cp	Sp	Gn	Cs	St	Bm	Bi	Py	Me	Ma	Po	As	Ga
Cp		0	0	2	6	0	1	23	0	0	13	46	80
Sp	0		0	0	0	0	0	0	0	0	0	0	0
Gn	0	0		0	0	0	0	0	0	0	0	0	0
Cs	50	0	0		8	0	0	50	0	0	25	50	83
St	50	0	0	12		0	0	0	0	0	0	62	100
Bm	0	0	0	0	0		46	38	0	0	28	0	100
Bi	4	0	0	0	0	29		69	0	0	20	9	62

Unity Mining - Lakeside Drillcore Mineralogy

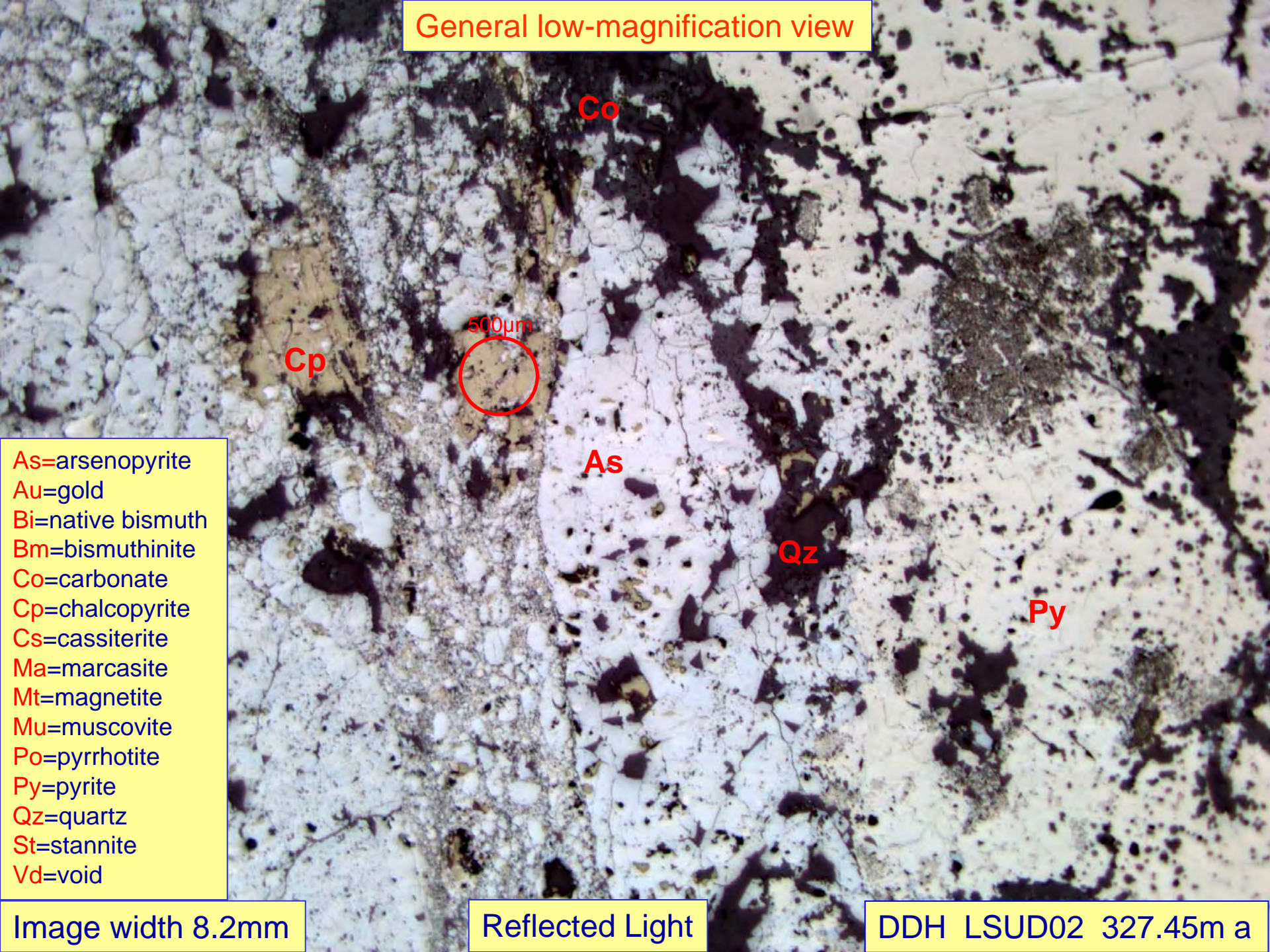
DDH LSUD02 327.45m
Cu-Sn-Bi-Zn-Pb SCAN

53µm Mask

February 2013



General low-magnification view



As=arsenopyrite
Au=gold
Bi=native bismuth
Bm=bismuthinite
Co=carbonate
Cp=chalcopyrite
Cs=cassiterite
Ma=marcasite
Mt=magnetite
Mu=muscovite
Po=pyrrhotite
Py=pyrite
Qz=quartz
St=stannite
Vd=void

Image width 8.2mm

Reflected Light

DDH LSUD02 327.45m a

Chalcopyrite-pyrrhotite interstitial to shattered arsenopyrite

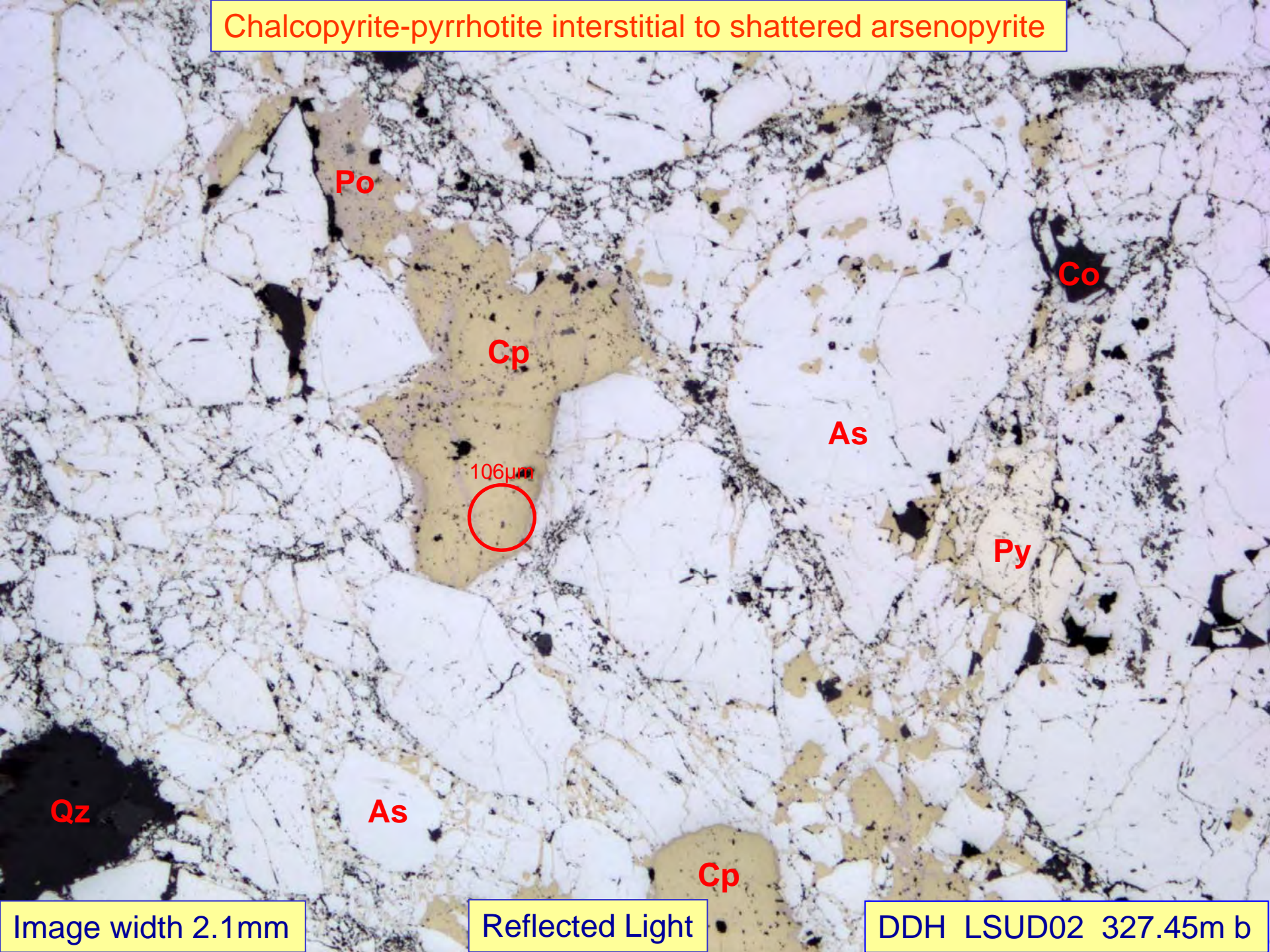


Image width 2.1mm

Reflected Light

DDH LSUD02 327.45m b

Cataclasised arsenopyrite with later chalcopyrite-pyrrhotite

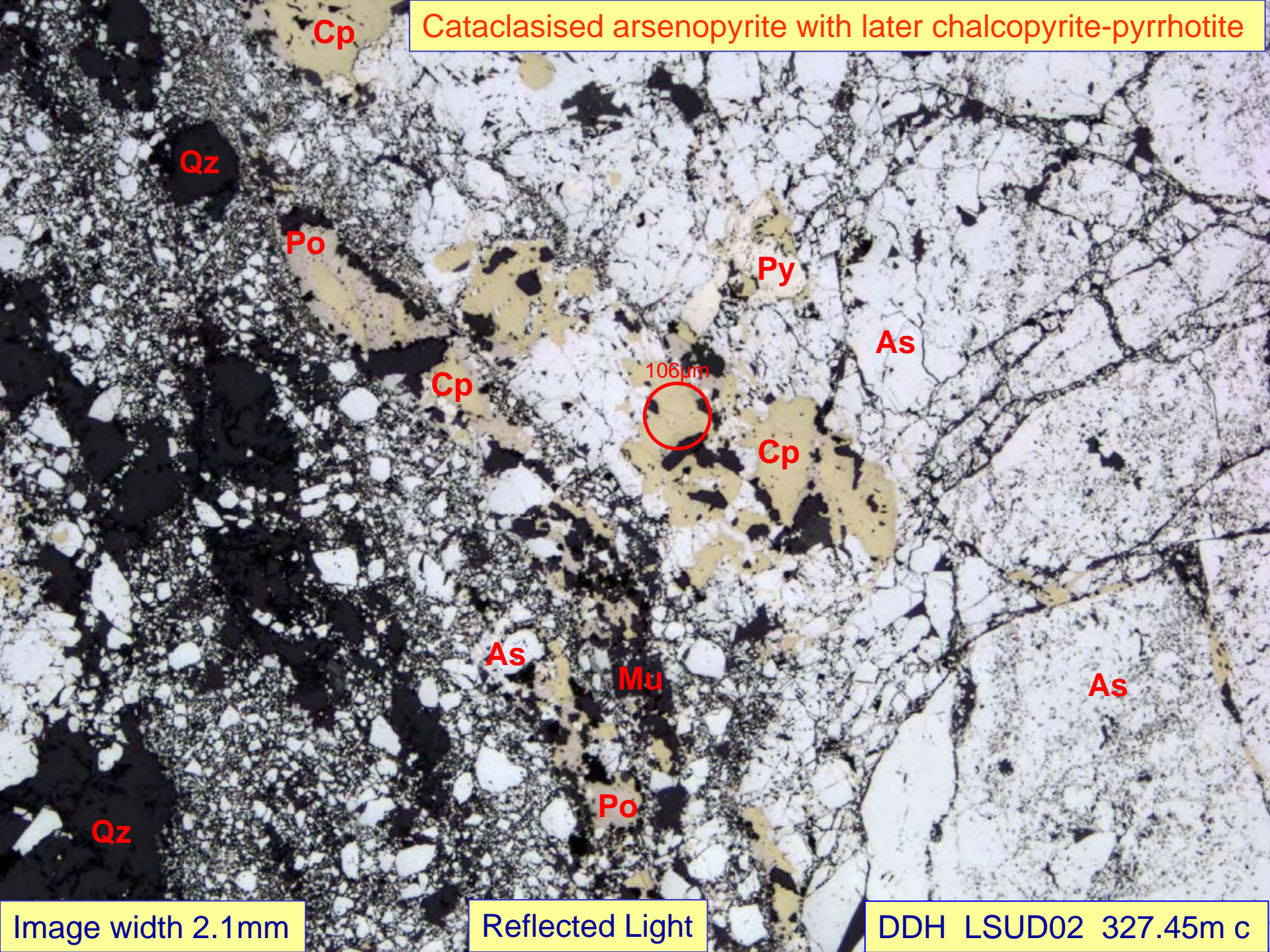
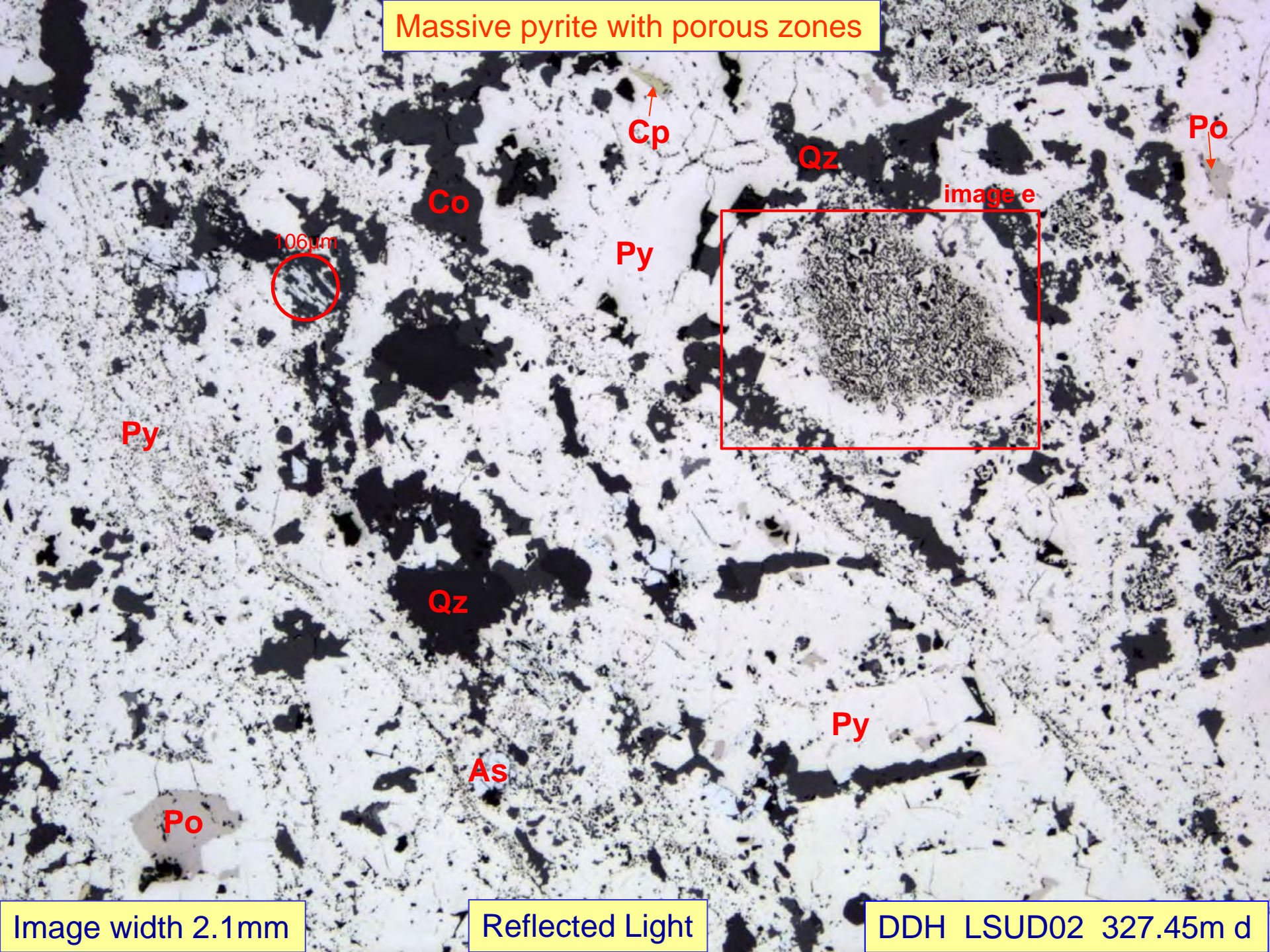


Image width 2.1mm

Reflected Light

DDH LSUD02 327.45m c

Massive pyrite with porous zones



Cp

Po

Qz

image e

Co

106µm

Py

Py

Qz

Py

As

Po

Image width 2.1mm

Reflected Light

DDH LSUD02 327.45m d

Detail from previous image

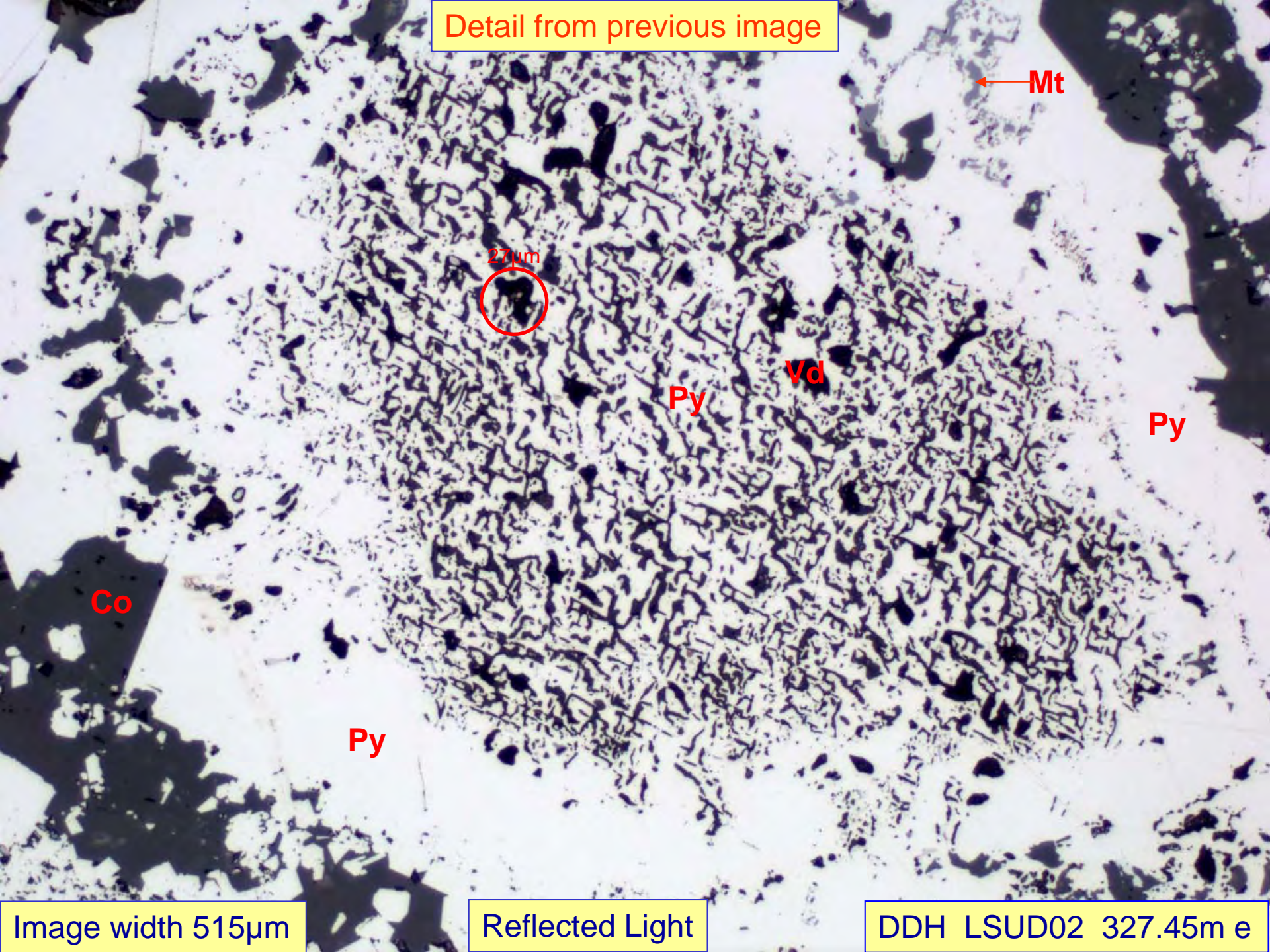
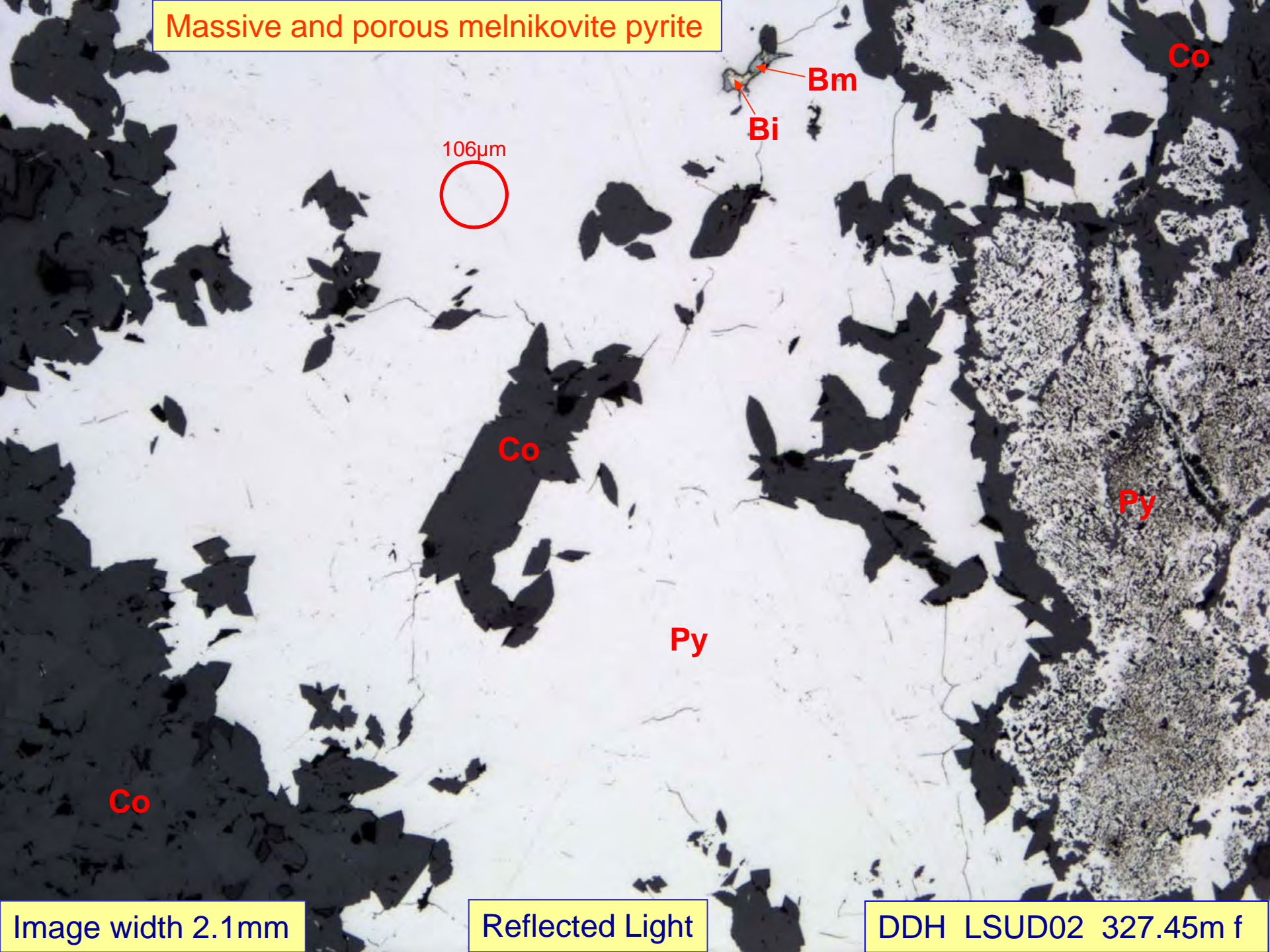


Image width 515µm

Reflected Light

DDH LSUD02 327.45m e

Massive and porous melnikovite pyrite



Co

Bm

Bi

106µm

Co

Py

Py

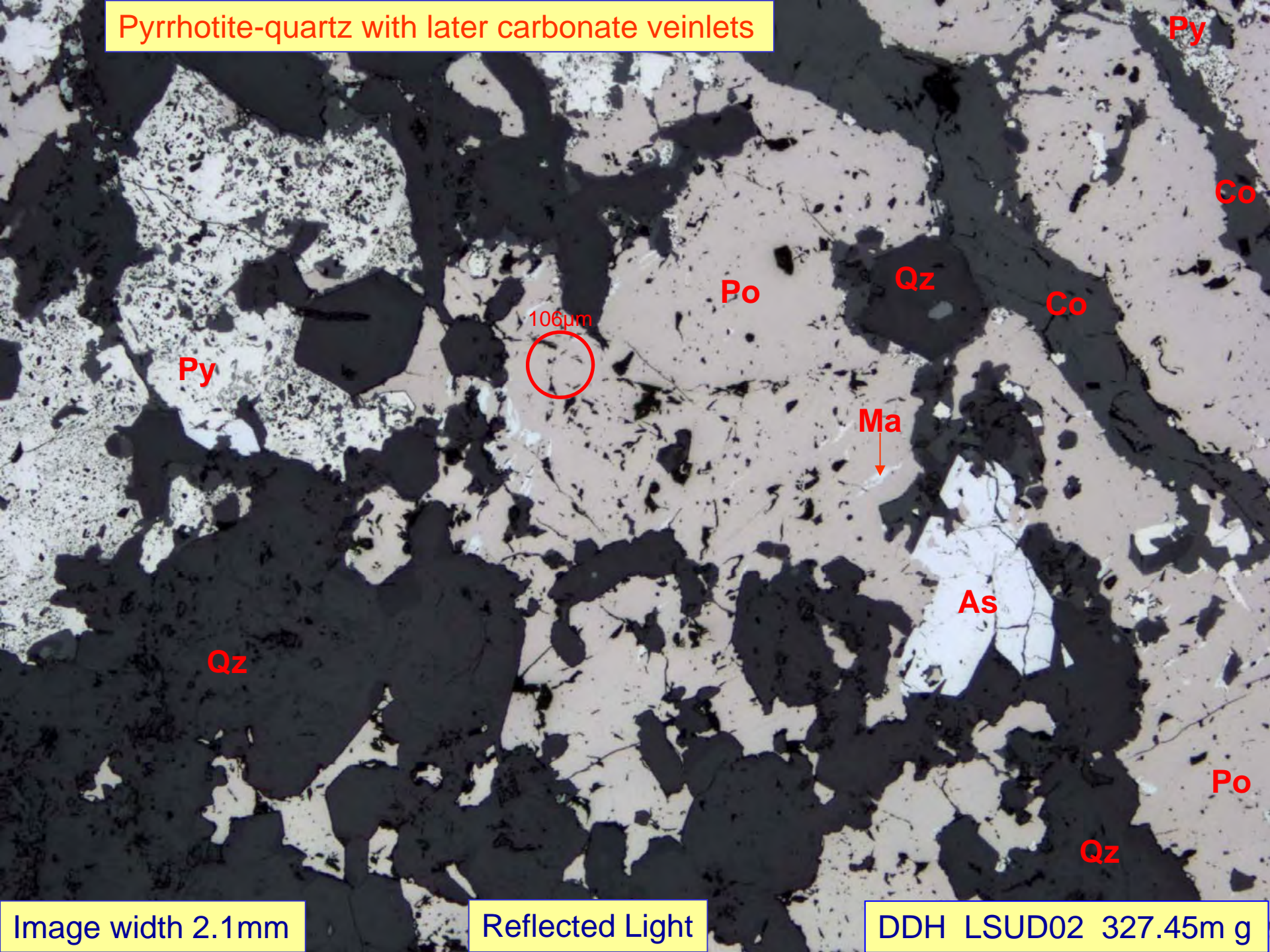
Co

Image width 2.1mm

Reflected Light

DDH LSUD02 327.45m f

Pyrrhotite-quartz with later carbonate veinlets



Melnikovite pyrite
(variably recrystallised)

Qz

Py

Co

Po

image 1

106µm

Py

Po

Py

Qz

Image width 2.1mm

Reflected Light

DDH LSUD02 327.45m h

Detail from previous image

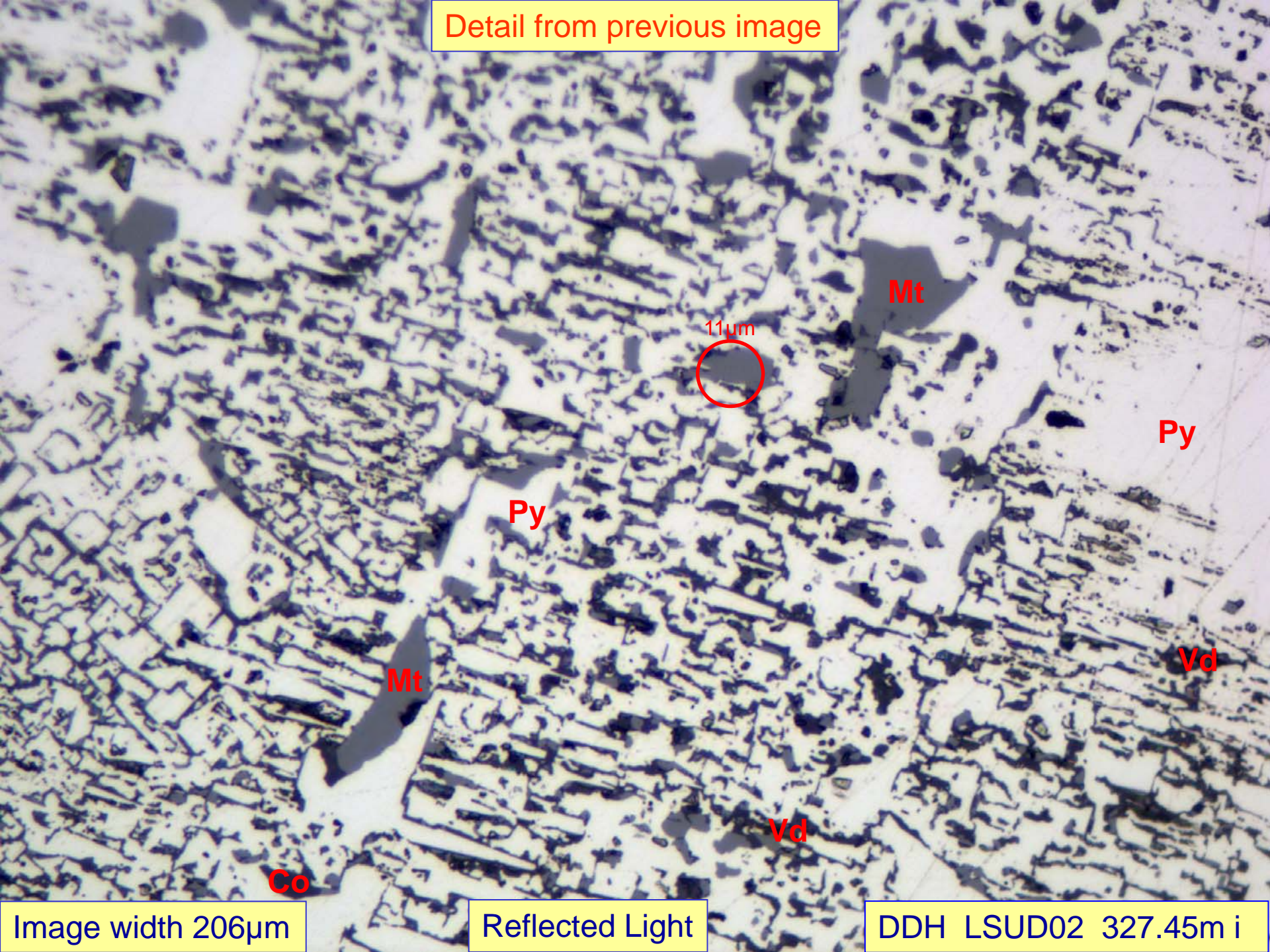
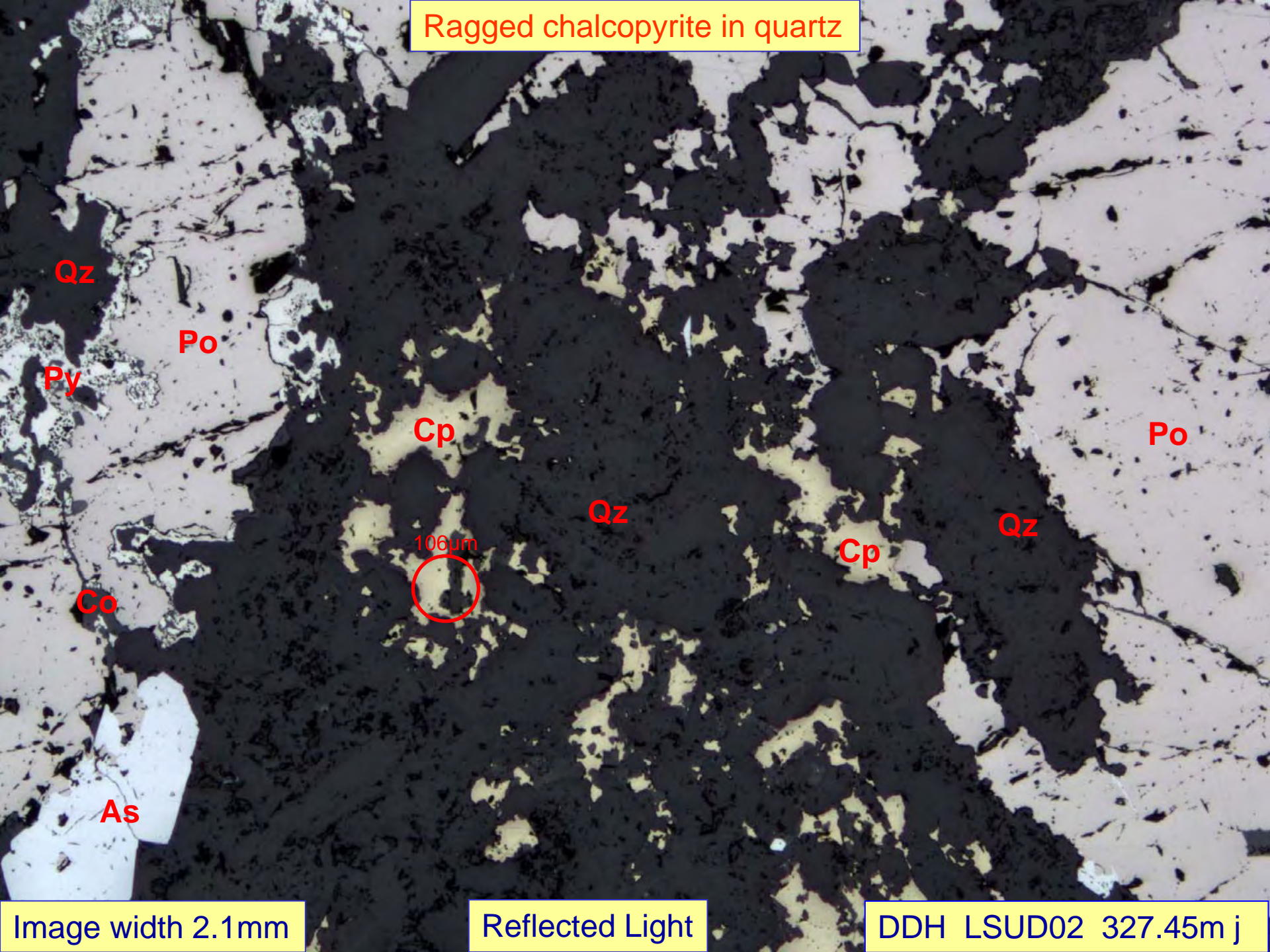


Image width 206µm

Reflected Light

DDH LSUD02 327.45m i

Ragged chalcopyrite in quartz



Qz

Po

Py

Cp

Qz

Po

Qz

Cp

106µm

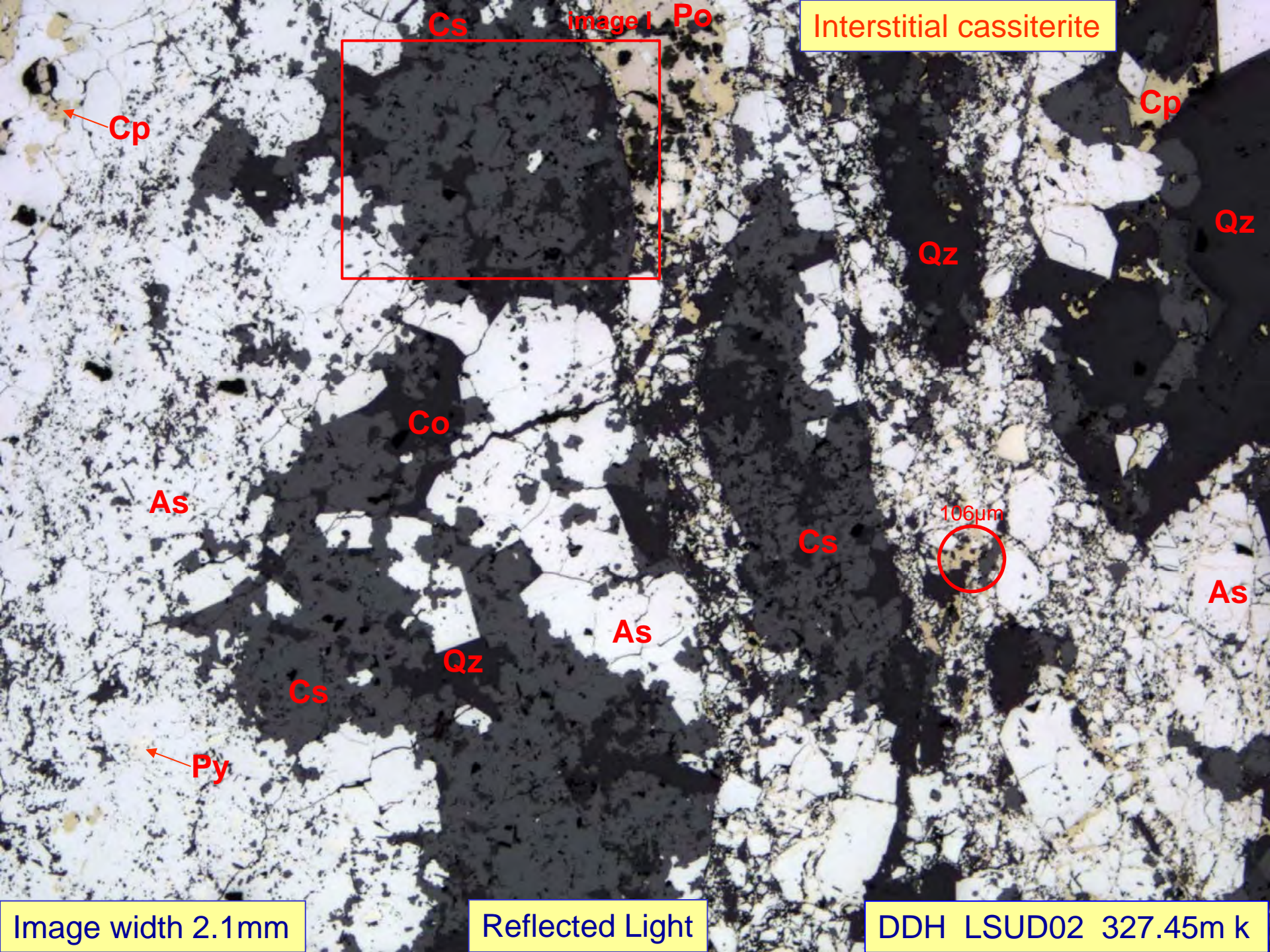
Co

As

Image width 2.1mm

Reflected Light

DDH LSUD02 327.45m j



Cs

Image 1

Po

Interstitial cassiterite

Cp

Cp

Qz

Qz

Co

As

106µm

Cs

As

As

Qz

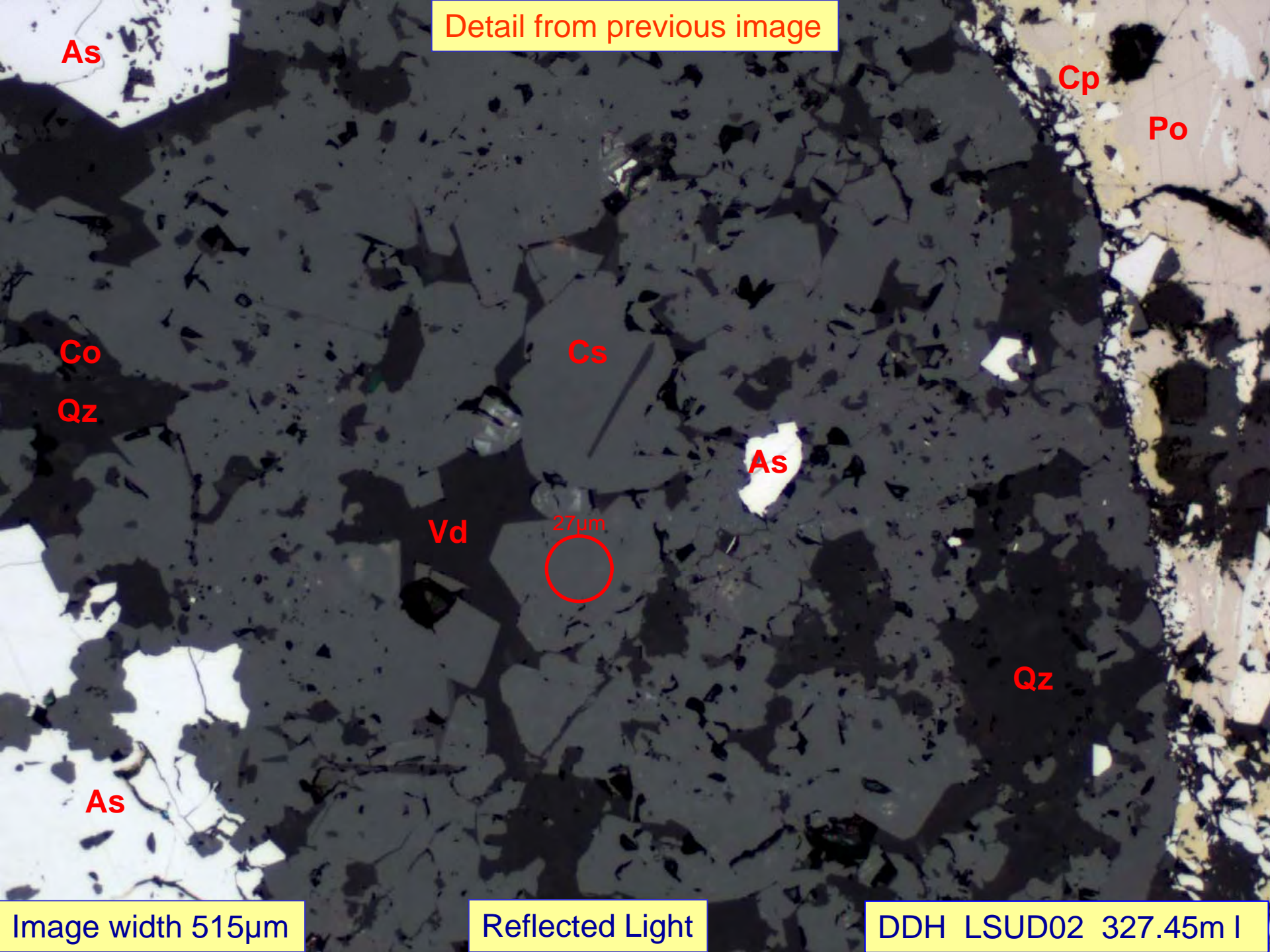
Cs

Py

Image width 2.1mm

Reflected Light

DDH LSUD02 327.45m k



Detail from previous image

As

Cp

Po

Co

Qz

Cs

As

Vd

27µm

Qz

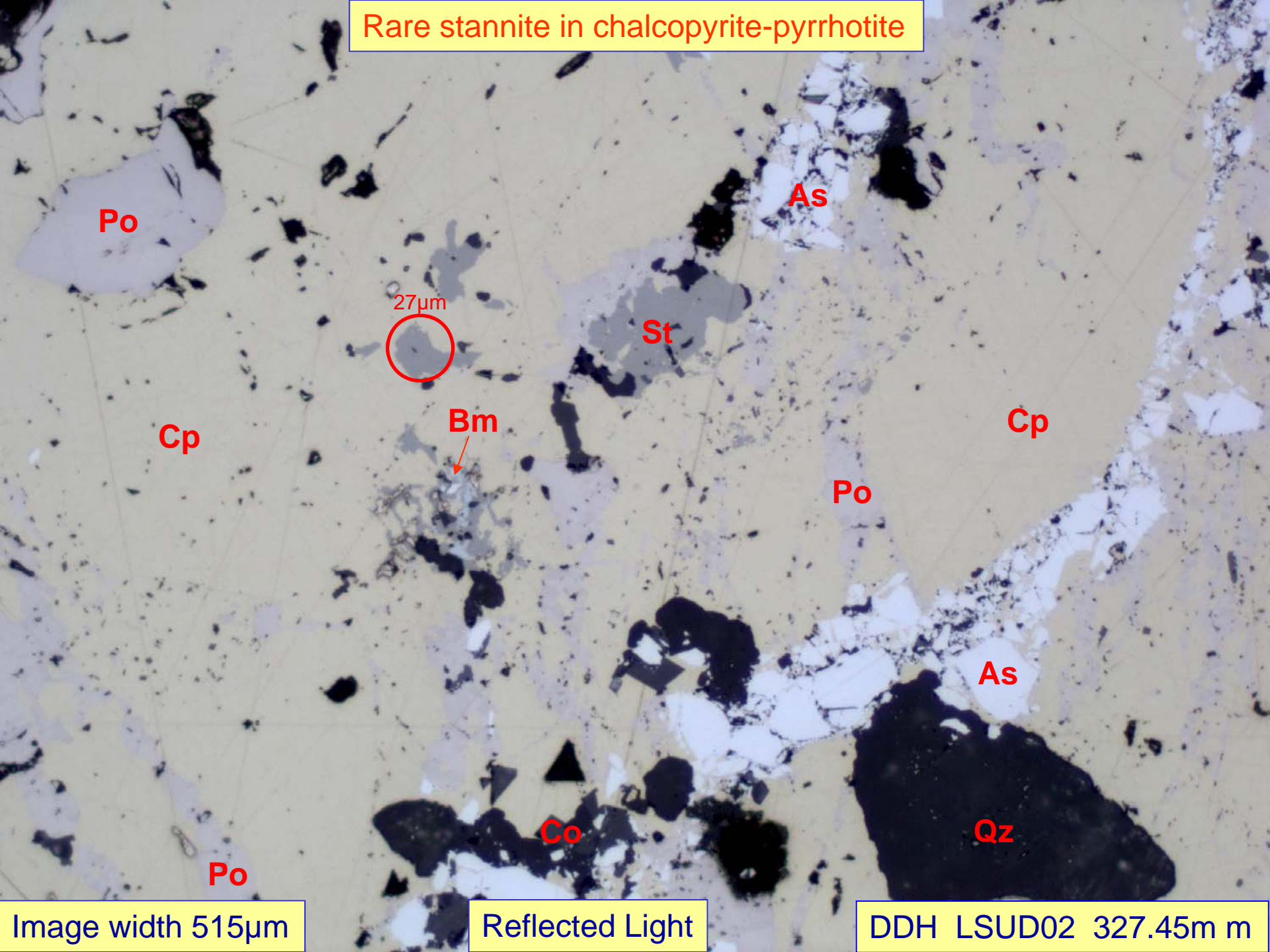
As

Image width 515µm

Reflected Light

DDH LSUD02 327.45m I

Rare stannite in chalcopyrite-pyrrhotite



Po

As

27µm

St

Cp

Bm

Cp

Po

As

Po

Co

Qz

Image width 515µm

Reflected Light

DDH LSUD02 327.45m m

Bismuthinite-native bismuth in pyrrhotite

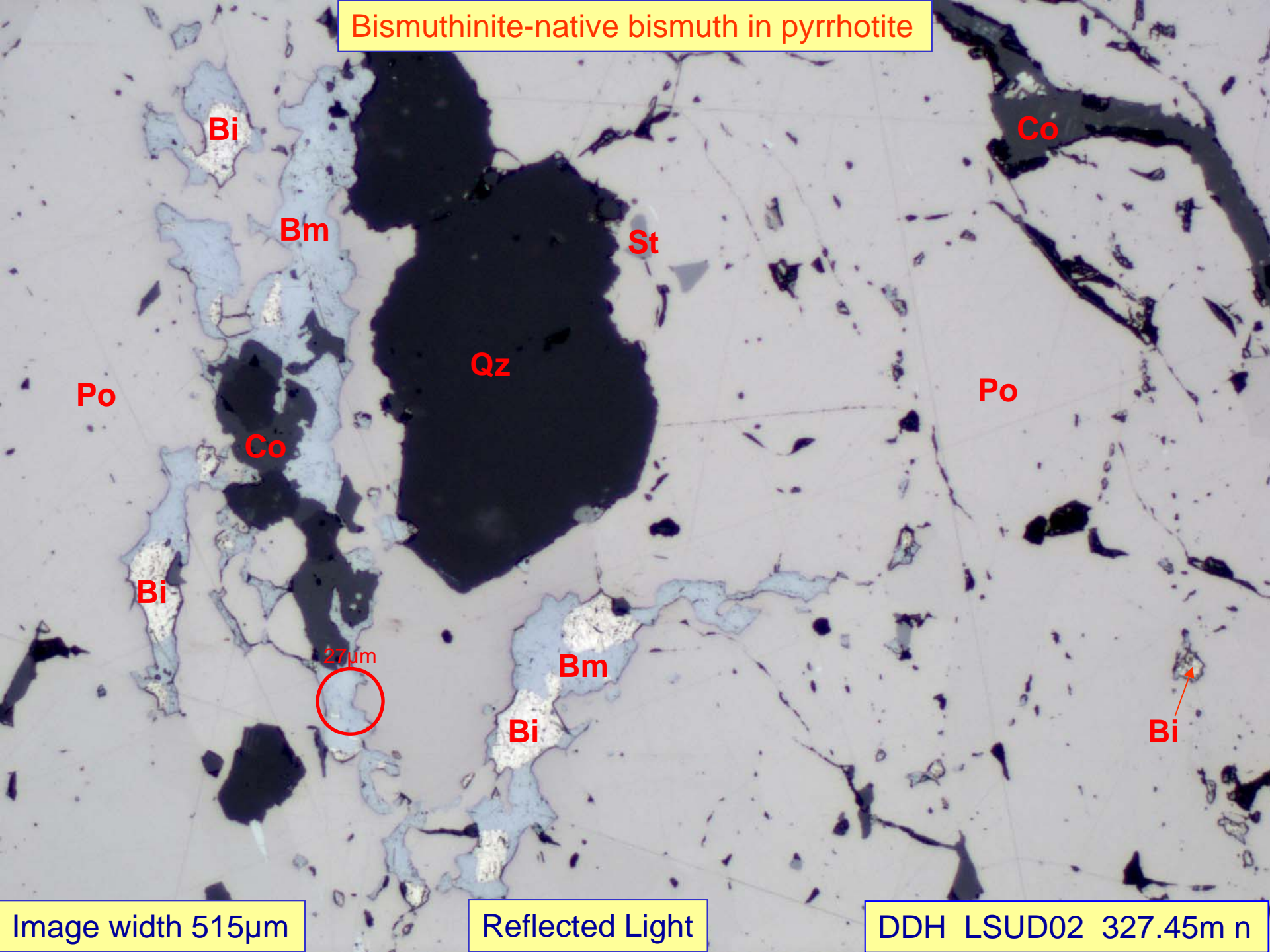
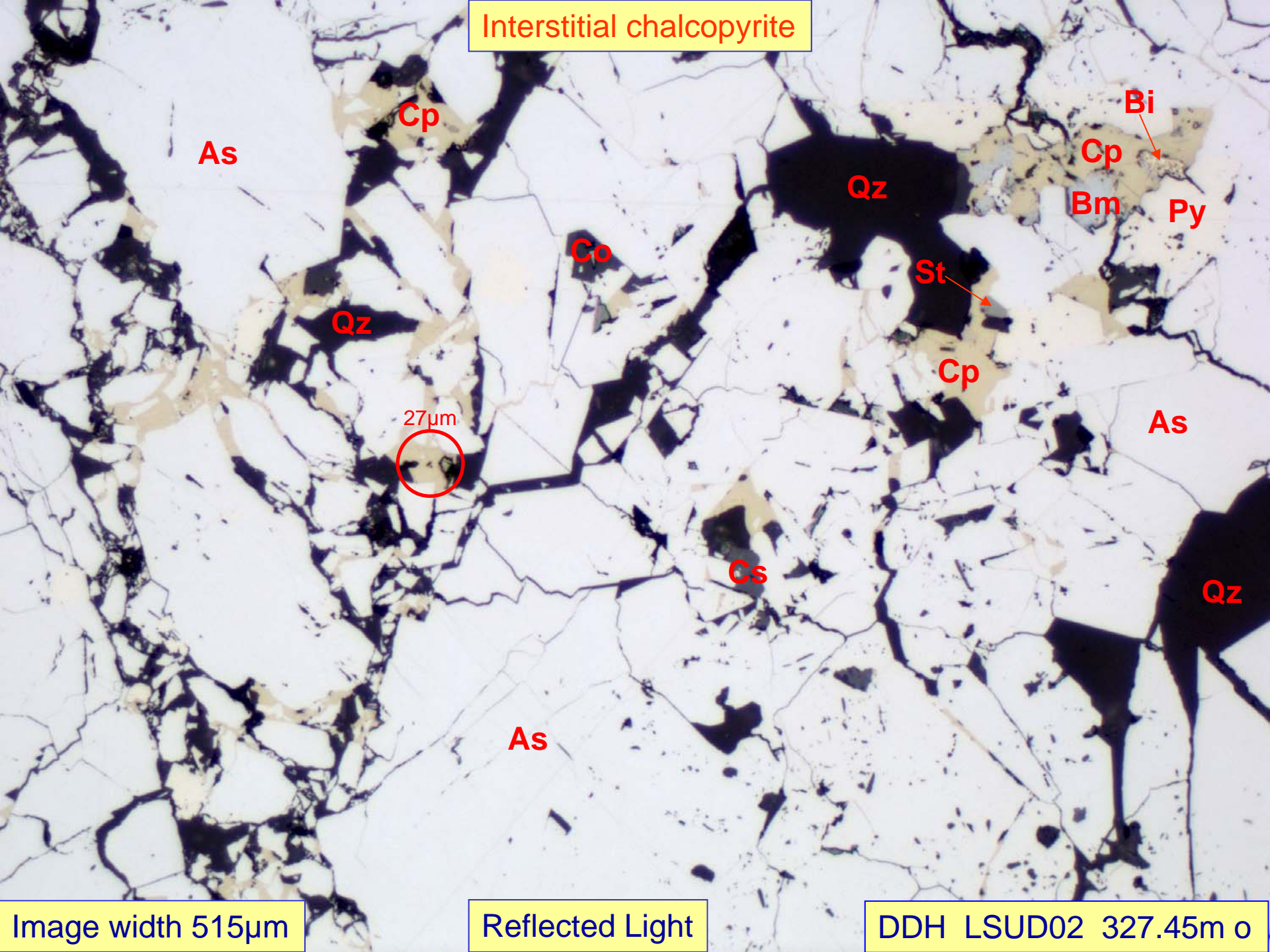


Image width 515µm

Reflected Light

DDH LSUD02 327.45m n

Interstitial chalcopyrite



As

Cp

Co

Qz

27µm

Cs

As

Qz

St

Cp

Bm

As

Qz

Cp

Py

Bi

Image width 515µm

Reflected Light

DDH LSUD02 327.45m o

Bismuth in carbonate-quartz

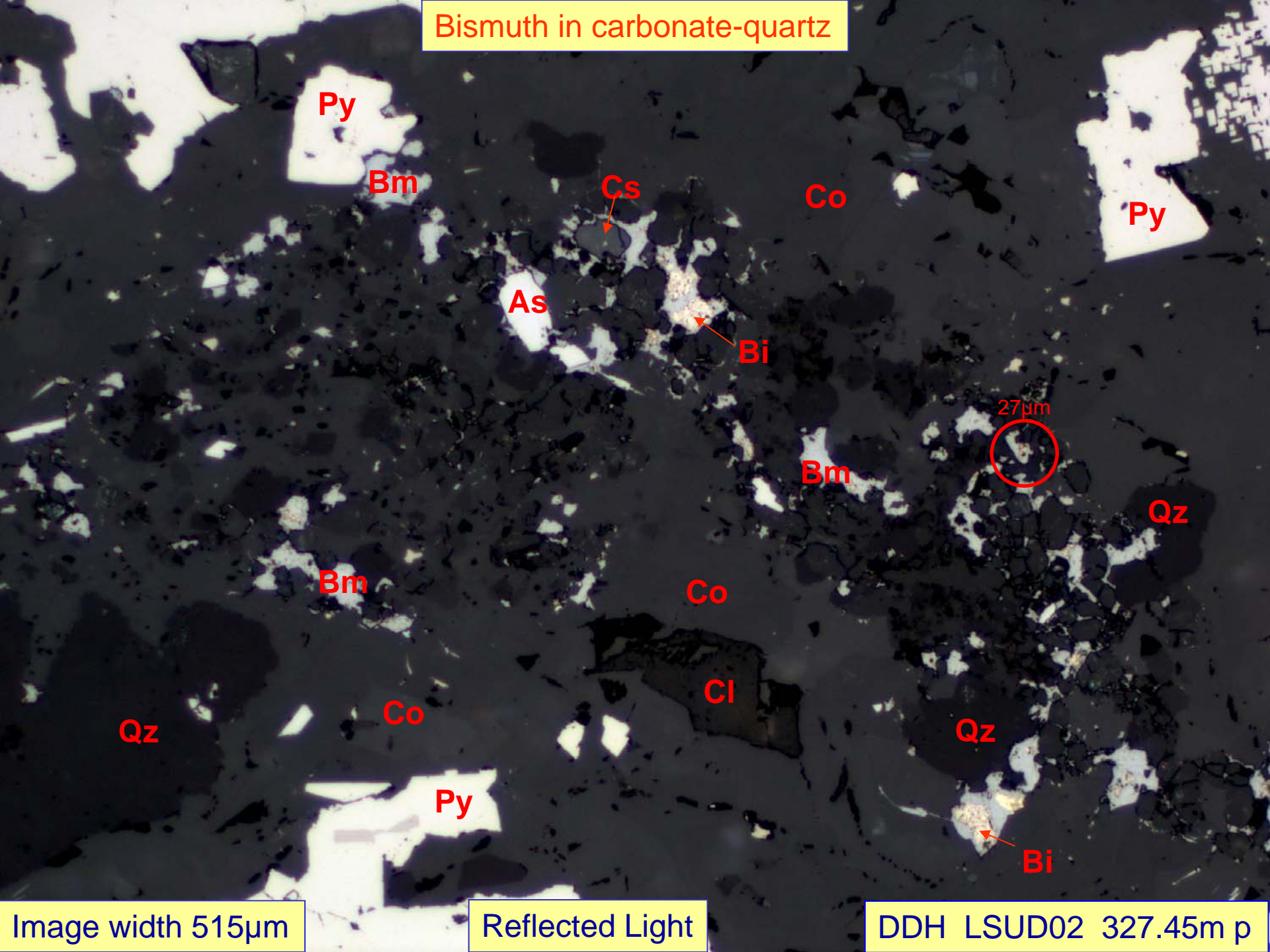


Image width 515µm

Reflected Light

DDH LSUD02 327.45m p

Interstitial pyrrhotite

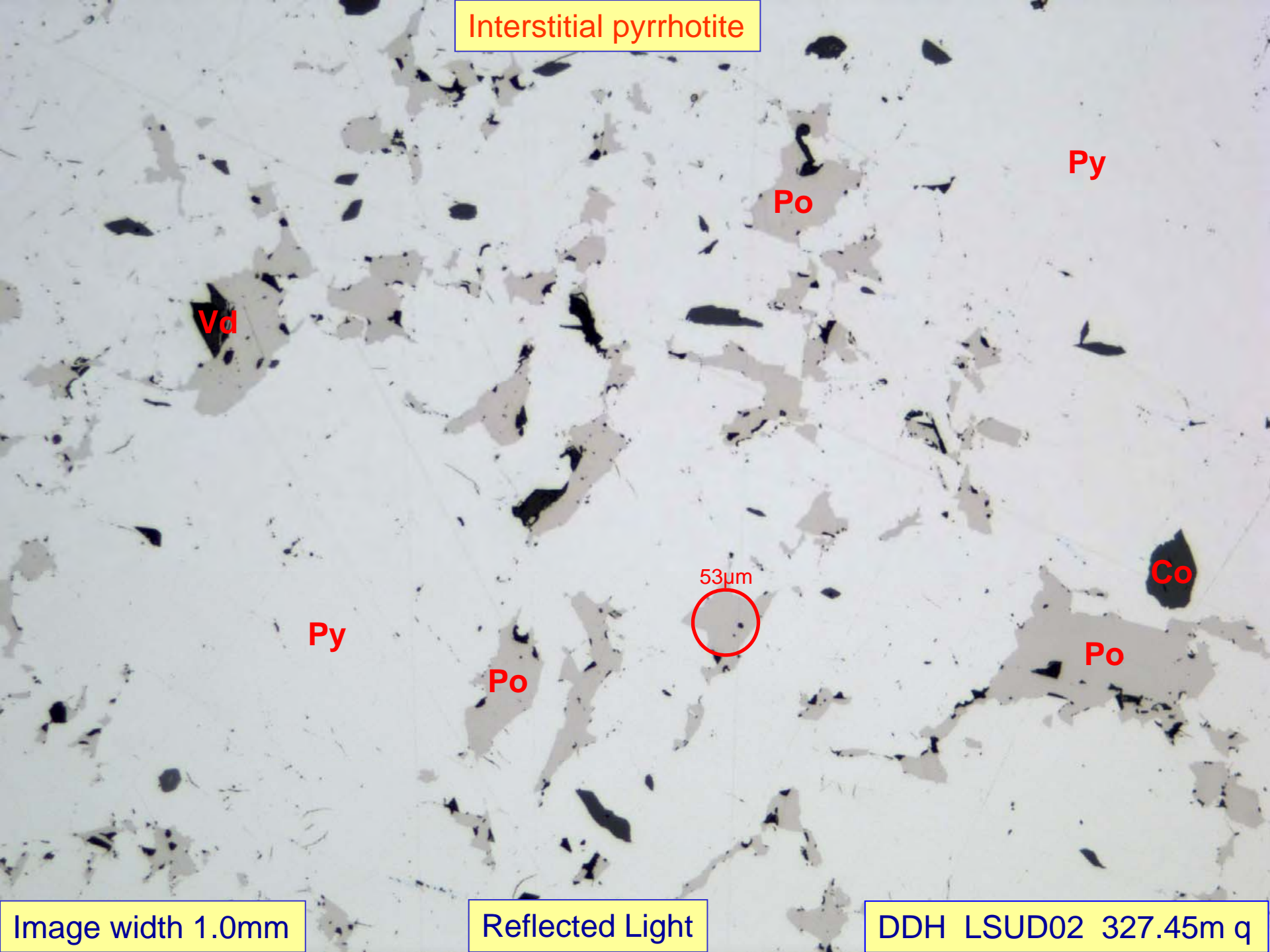
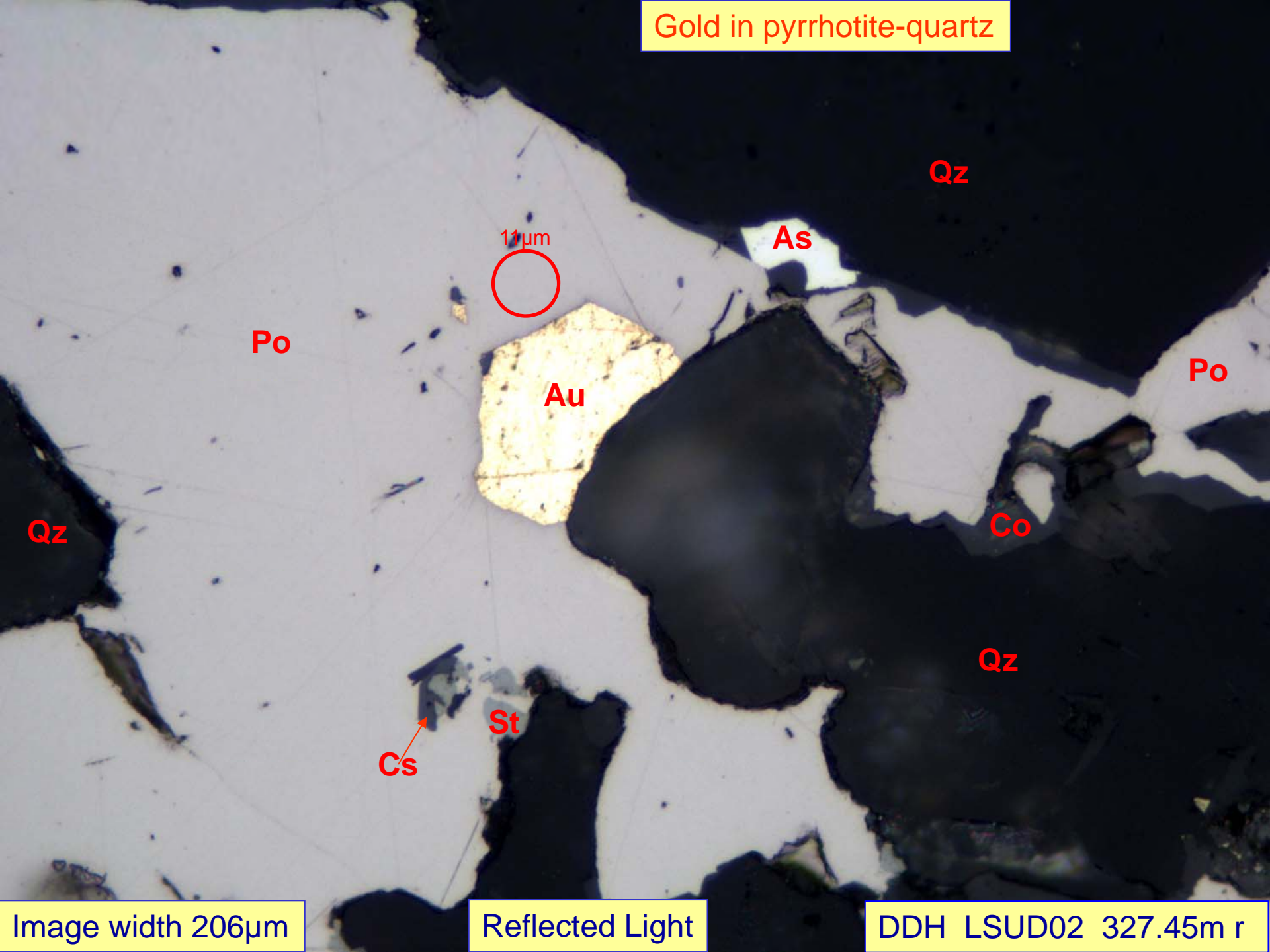


Image width 1.0mm

Reflected Light

DDH LSUD02 327.45m q

Gold in pyrrhotite-quartz



Po

Qz

As

Po

Au

Co

Qz

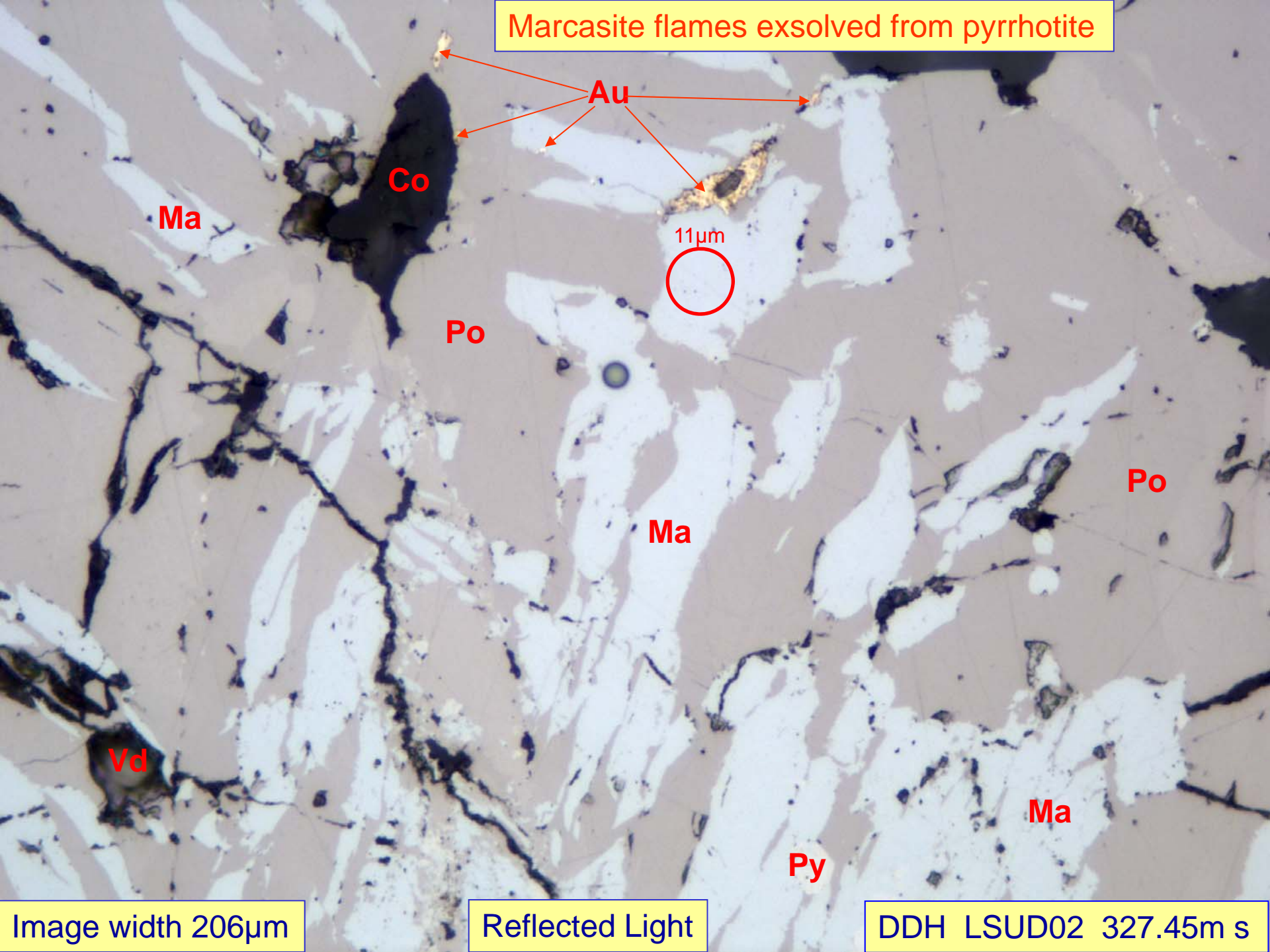
Qz

St

Cs

11µm

Marcasite flames exsolved from pyrrhotite



Au

Co

Ma

11µm

Po

Po

Ma

Vd

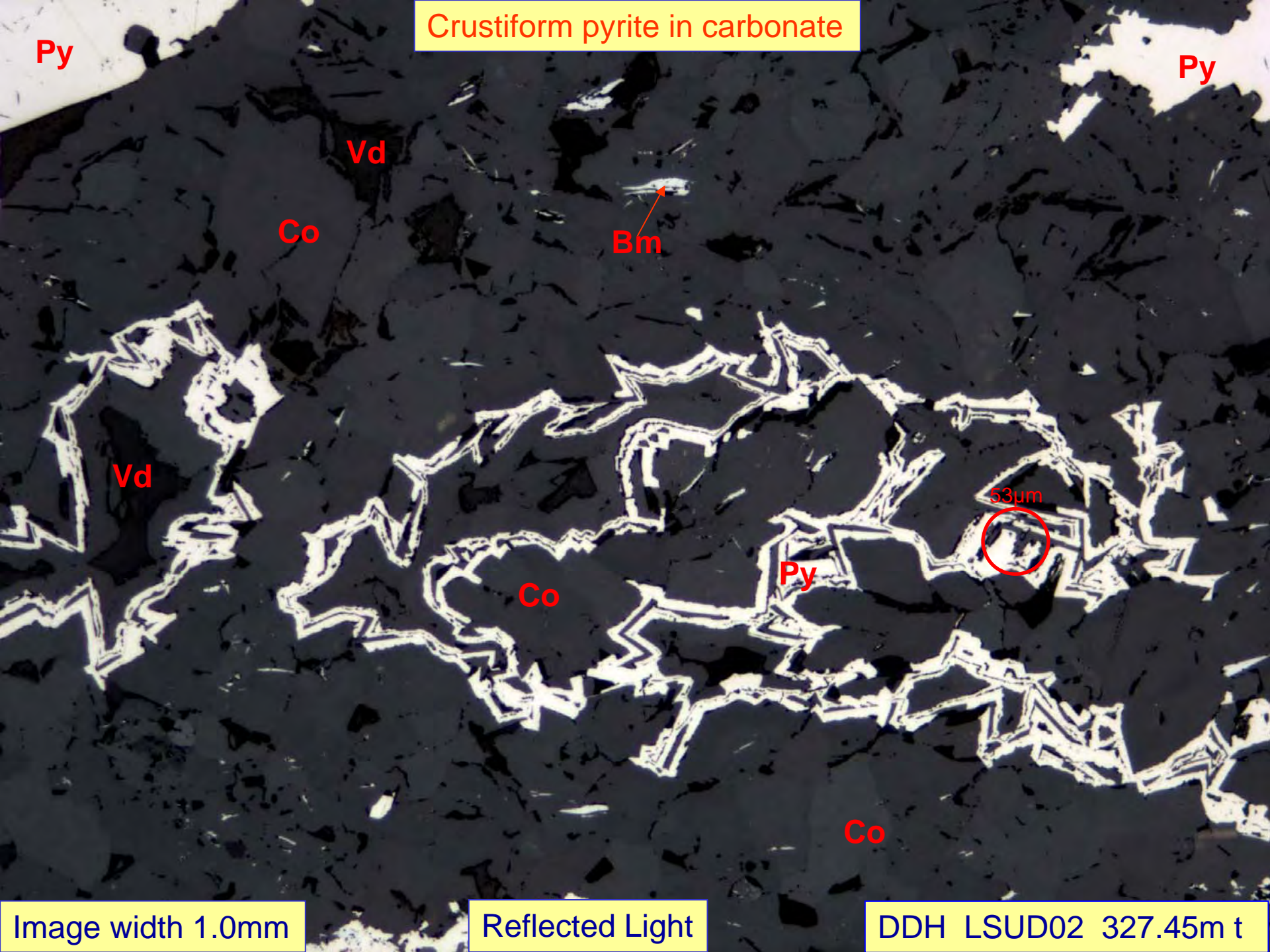
Ma

Py

Image width 206µm

Reflected Light

DDH LSUD02 327.45m s



Crustiform pyrite in carbonate

Py

Py

Vd

Co

Bm

Vd

Co

Py

53µm

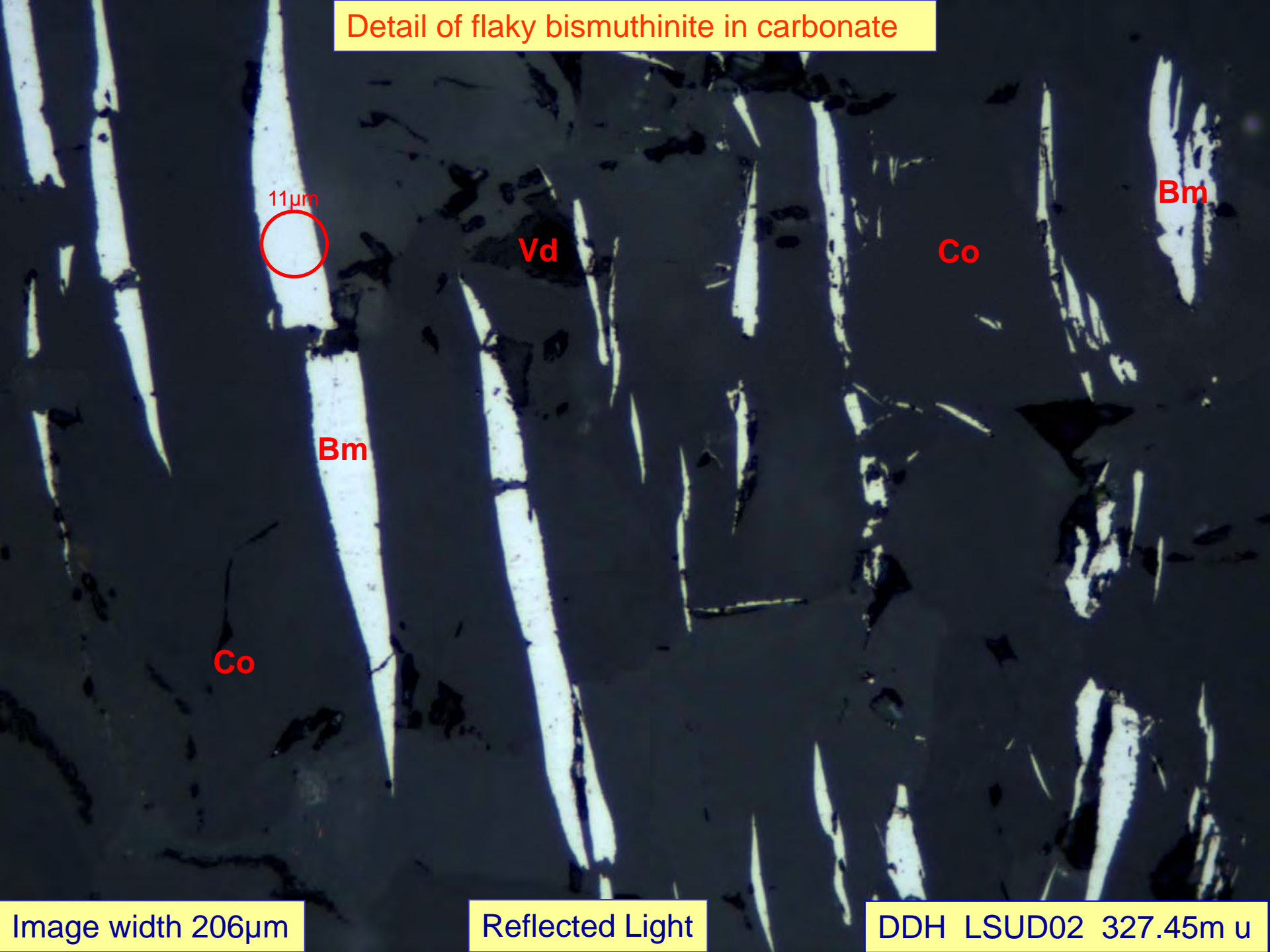
Co

Image width 1.0mm

Reflected Light

DDH LSUD02 327.45m t

Detail of flaky bismuthinite in carbonate



11µm

Bm

Vd

Co

Bm

Co

Image width 206µm

Reflected Light

DDH LSUD02 327.45m u

Detail of quartz-carbonate-chalcopyrite interstitial to cataclased arsenopyrite

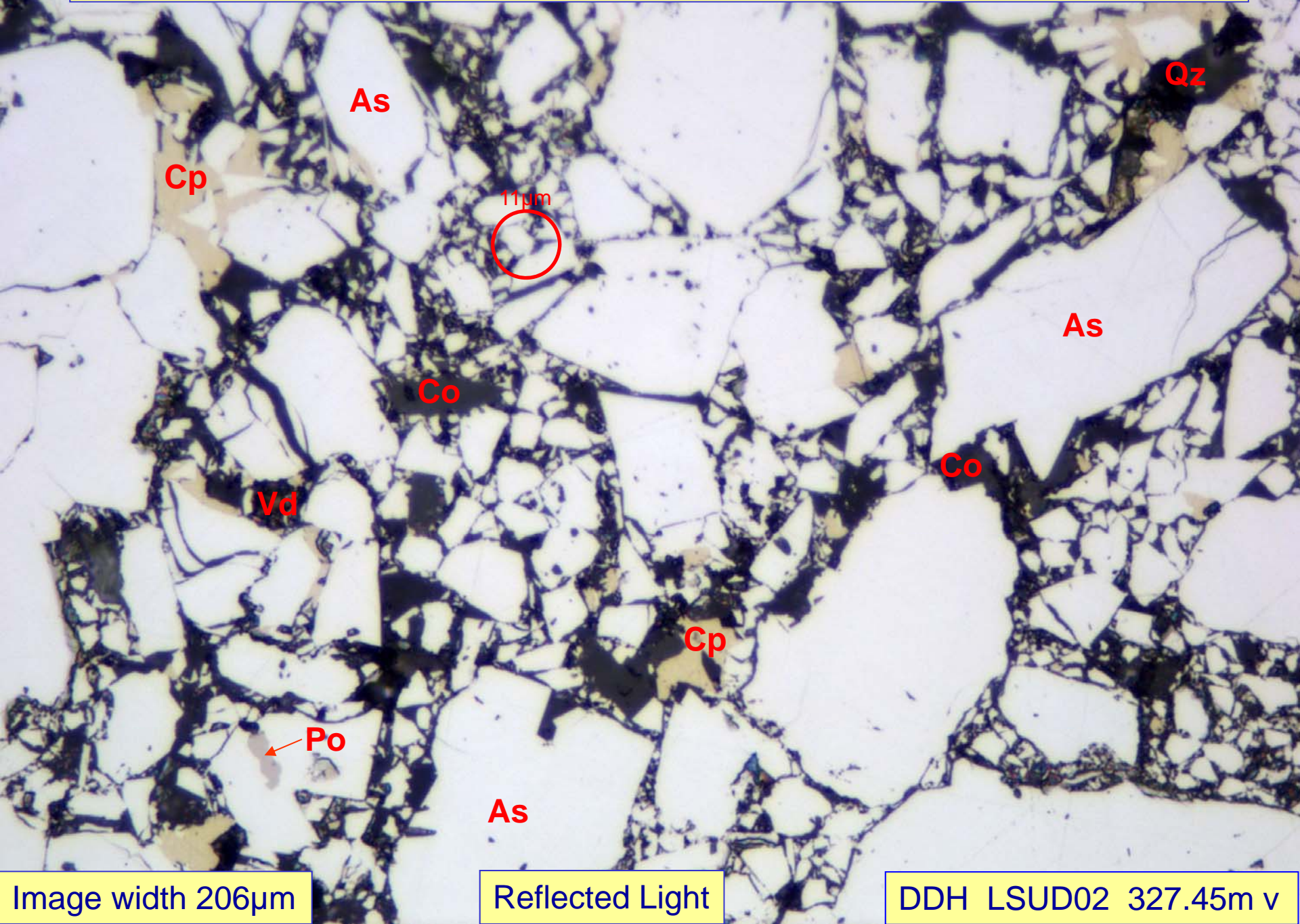


Image width 206µm

Reflected Light

DDH LSUD02 327.45m v

Offcut Assay

0.31%Cu, 31ppmPb, 59ppmZn, 113ppmBi, >10%As, 0.02%Sn, 8.61%S, 2.5ppmAu



Unity Mining Ltd - Lakeside Drillcore Mineralogy

Sample DDH LSUD02 327.6m

GJMcA 11.2.13

Total Scan Data - 530µm Mask

Average composition																			
	Cp	Sp	Gn	Cs	St	Bm	Bi	Py	Me	Ma	Po	As	Qz	Cl	Co	Mu	Ru	Cy	Other
Vol%	0.4	0.0	0.0	0.0	0.0	0.0	0.0	1.5	0.0	0.0	0.1	33.5	50.9	11.1	0.6	1.8	0.1	0.0	0.0
Wt%	0.4	0.0	0.0	0.0	0.0	0.0	0.0	1.9	0.0	0.0	0.1	53.1	34.8	7.7	0.5	1.3	0.1	0.0	0.0

ASSAYS										ppm
SG	%Cu	%Pb	%Zn	%As	%Sn	%Bi	%Fe	Au		
3.83	0.14	0.00	0.00	24.4	0.00	0.00	20.3			
Actual	0.31	0.00	0.01	>10	0.02	0.01		2.50		

Mineral Abbreviations			
Cp	Chalcopyrite	Ma	Marcasite
Sp	Sphalerite	Po	Pyrrhotite
Gn	Galena	As	Arsenopyrite
Cs	Cassiterite	Qz	Quartz
St	Stannite	Cl	Chlorite
Bm	Bismuthinite	Co	Carbonate
Bi	Native Bismuth	Mu	Muscovite
Py	Pyrite	Ru	Rutile
Me	Melnikovite	Cy	Clay

Economic Mineral Scan Data - 53µm Mask

COMPOSITE PROPORTIONS							
	Cp	Sp	Gn	Cs	St	Bm	Bi
Mono	0	0	0	0	0	0	0
Binary	31	18	0	0	0	0	0
Ternary	36	82	0	0	0	0	0
Quat.y+	32	0	0	100	99	0	0

BINARY ASSOCIATION MATRIX													
	Cp	Sp	Gn	Cs	St	Bm	Bi	Py	Me	Ma	Po	As	Ga
Cp		7	0	0	0	0	0	8	0	0	0	9	6
Sp	18		0	0	0	0	0	0	0	0	0	0	0
Gn	0	0		0	0	0	0	0	0	0	0	0	0
Cs	0	0	0		0	0	0	0	0	0	0	0	0
St	0	0	0	0		0	0	0	0	0	0	0	0
Bm	0	0	0	0	0		0	0	0	0	0	0	0
Bi	0	0	0	0	0	0		0	0	0	0	0	0

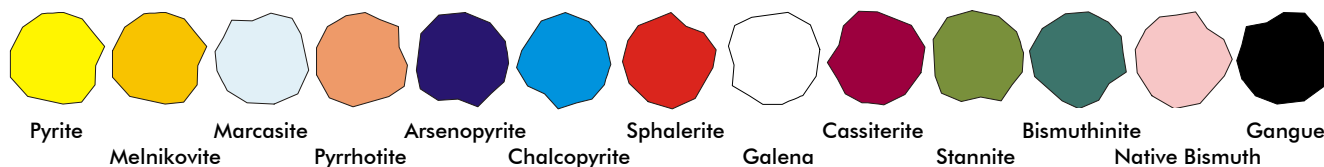
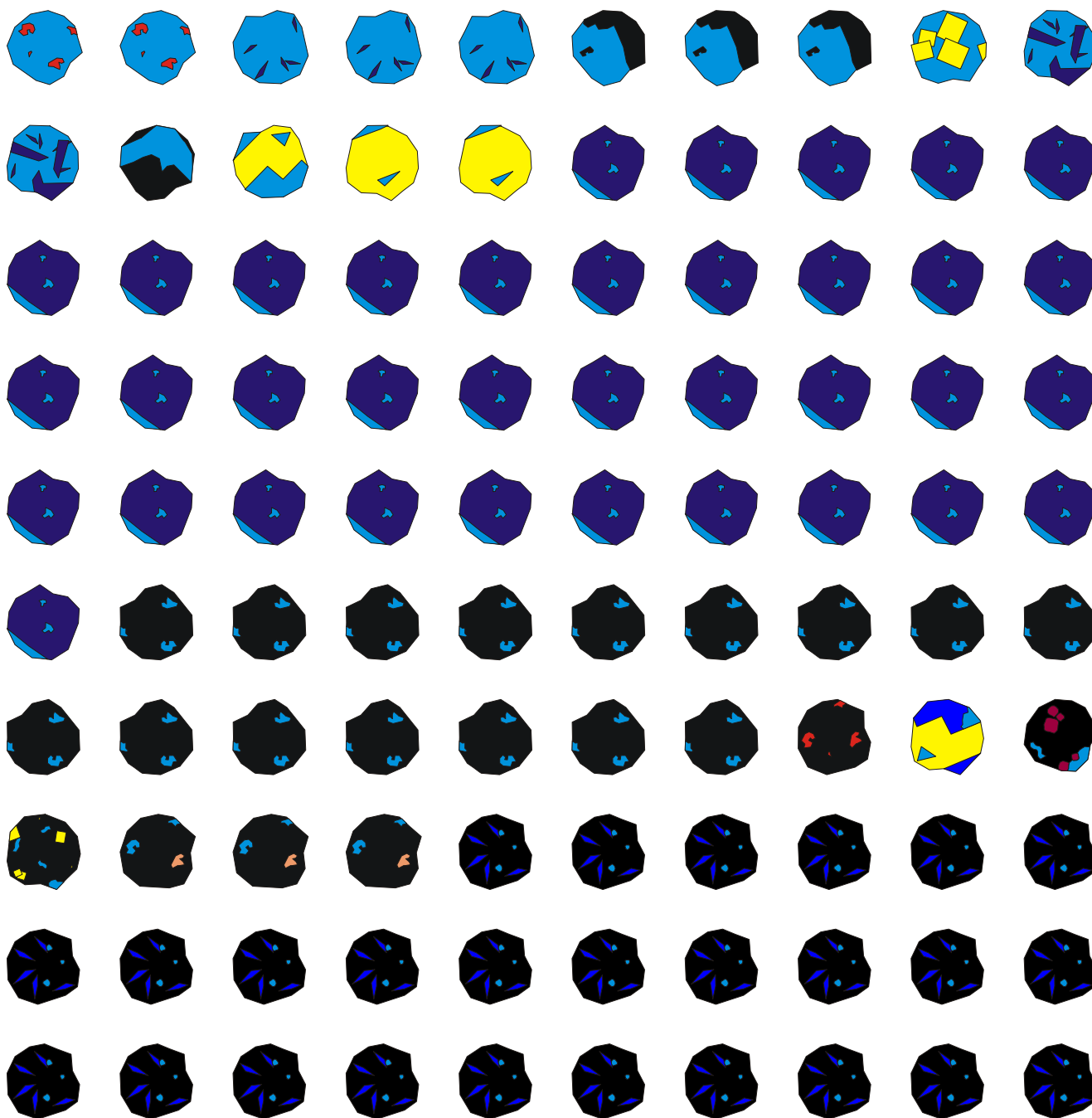
TOTAL ASSOCIATION MATRIX													
	Cp	Sp	Gn	Cs	St	Bm	Bi	Py	Me	Ma	Po	As	Ga
Cp		14	0	0	0	0	0	26	0	0	14	63	65
Sp	54		0	0	0	0	0	0	0	0	0	82	45
Gn	0	0		0	0	0	0	0	0	0	0	0	0
Cs	100	0	0		100	0	0	100	0	0	0	100	100
St	99	0	0	99		0	0	99	0	0	0	99	99
Bm	0	0	0	0	0		0	0	0	0	0	0	0
Bi	0	0	0	0	0	0		0	0	0	0	0	0

Unity Mining - Lakeside Drillcore Mineralogy

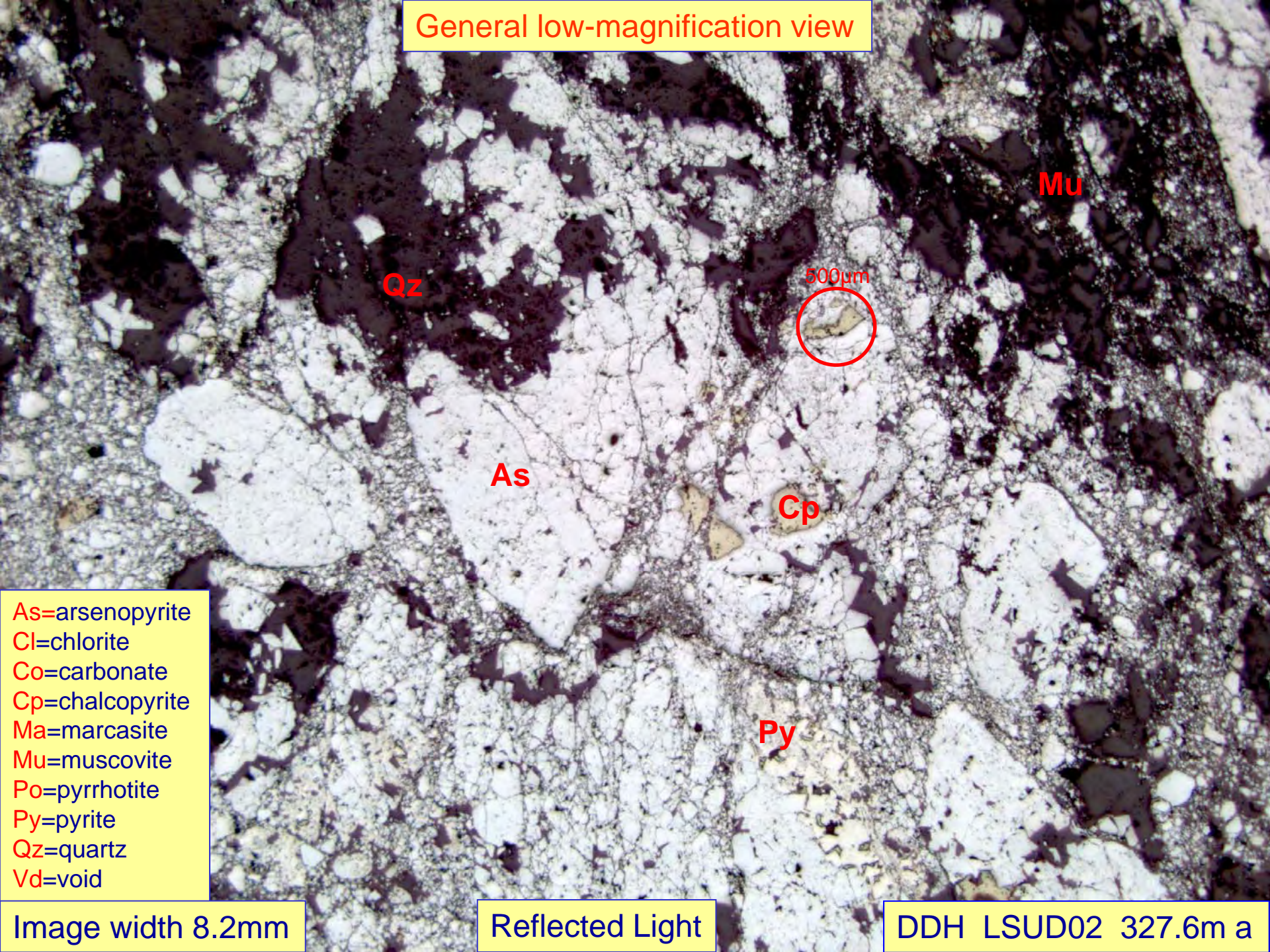
DDH LSUD02 327.6m
Cu-Sn-Bi-Zn-Pb SCAN

53µm Mask

February 2013



General low-magnification view



Mu

Qz

500µm

As

Cp

Py

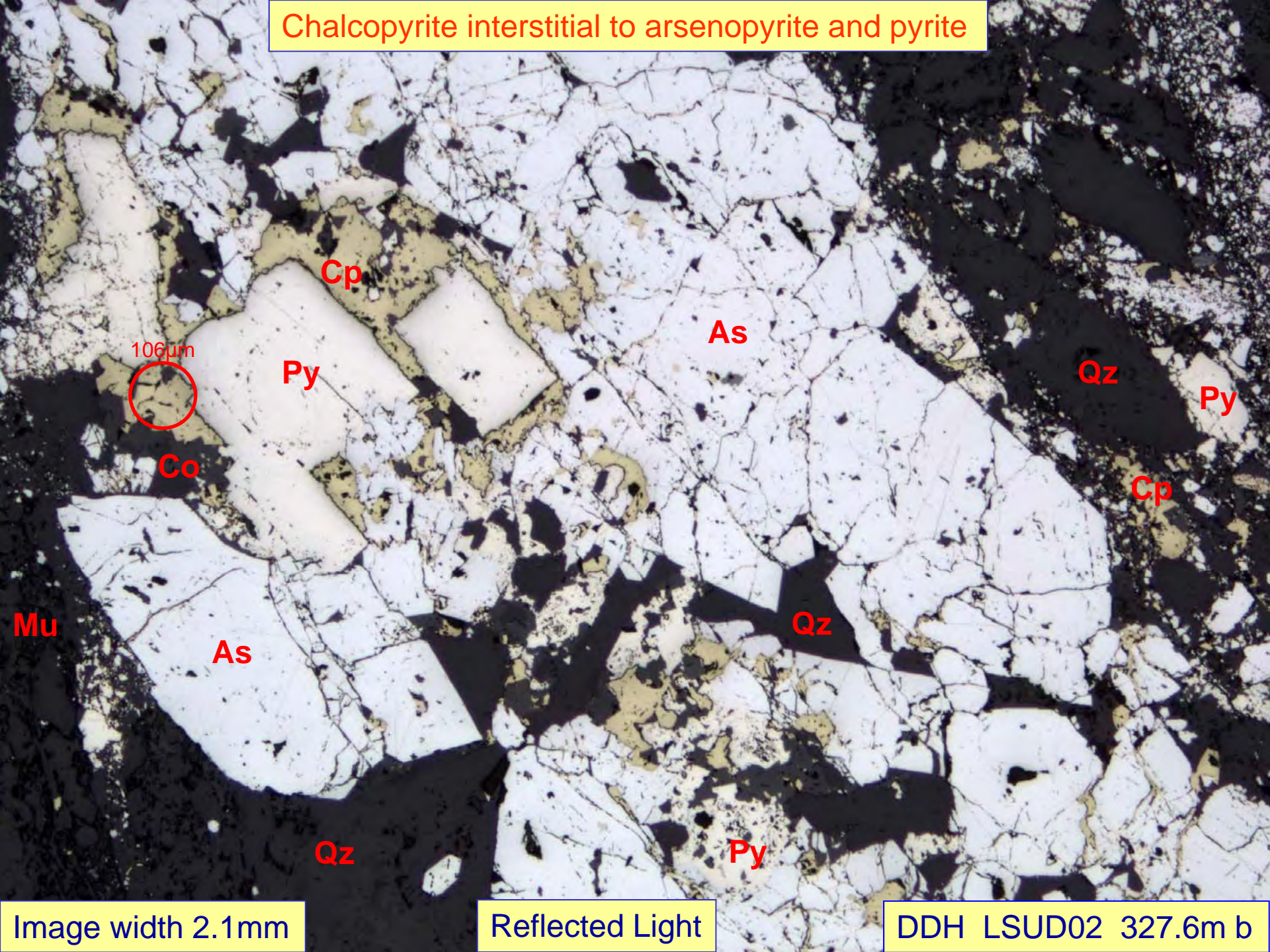
As=arsenopyrite
Cl=chlorite
Co=carbonate
Cp=chalcopyrite
Ma=marcasite
Mu=muscovite
Po=pyrrhotite
Py=pyrite
Qz=quartz
Vd=void

Image width 8.2mm

Reflected Light

DDH LSUD02 327.6m a

Chalcopyrite interstitial to arsenopyrite and pyrite



106μm

Cp

As

Py

Qz

Py

Co

Cp

Qz

As

Py

Qz

Mu

Image width 2.1mm

Reflected Light

DDH LSUD02 327.6m b

Chaotic shattered arsenopyrite

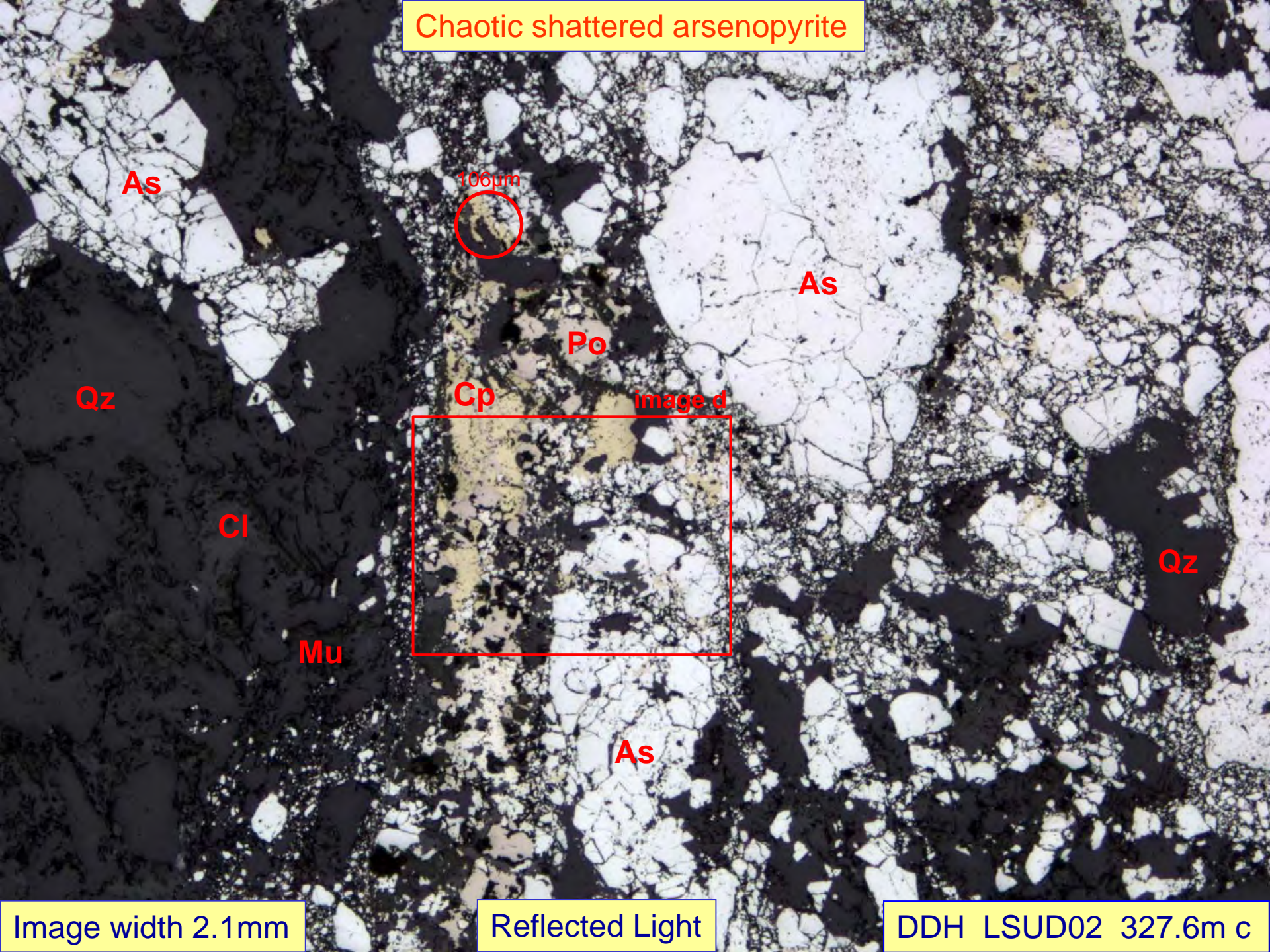
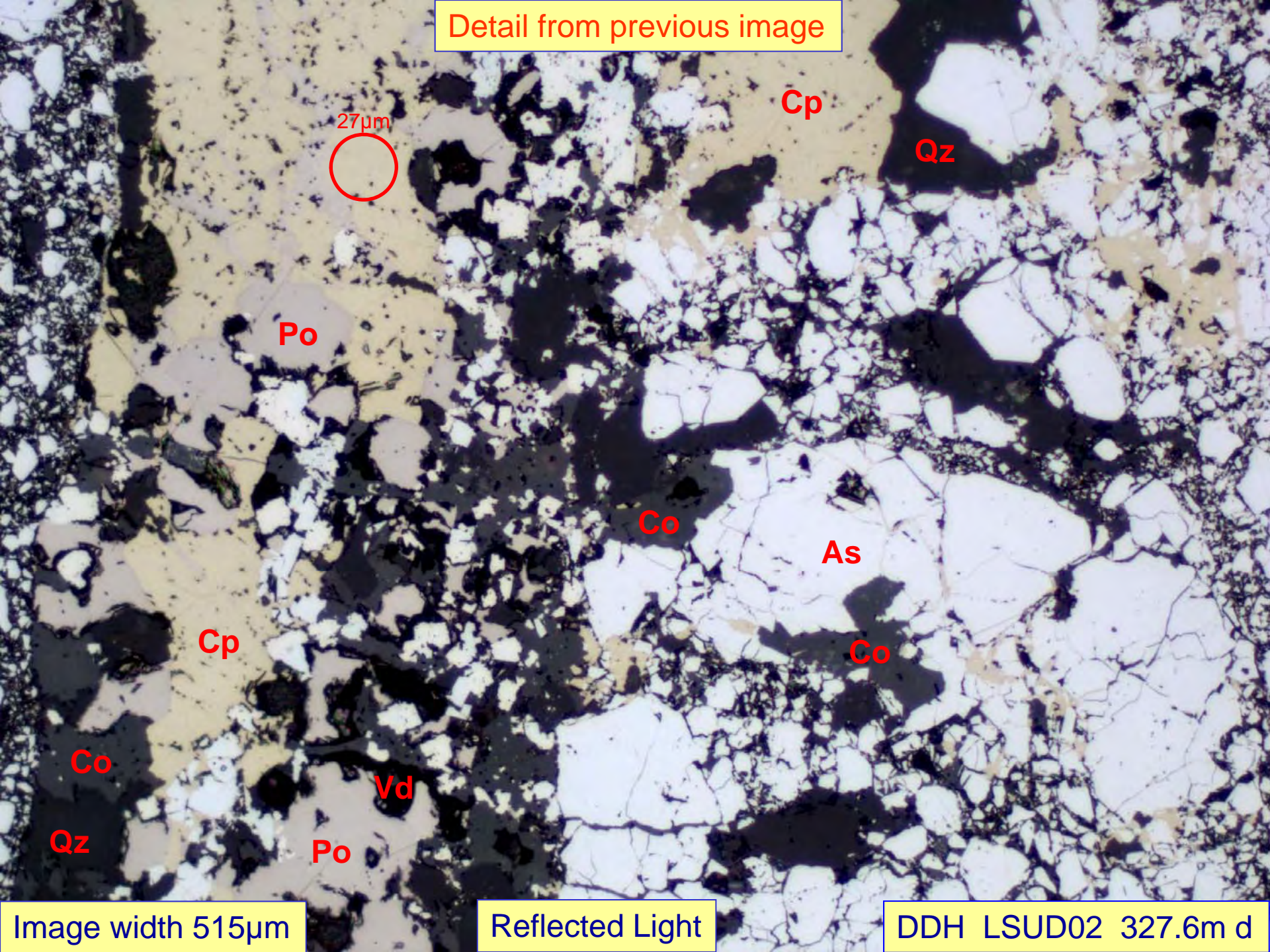


Image width 2.1mm

Reflected Light

DDH LSUD02 327.6m c

Detail from previous image



27μm

Cp

Qz

Po

Co

As

Co

Cp

Co

Vd

Po

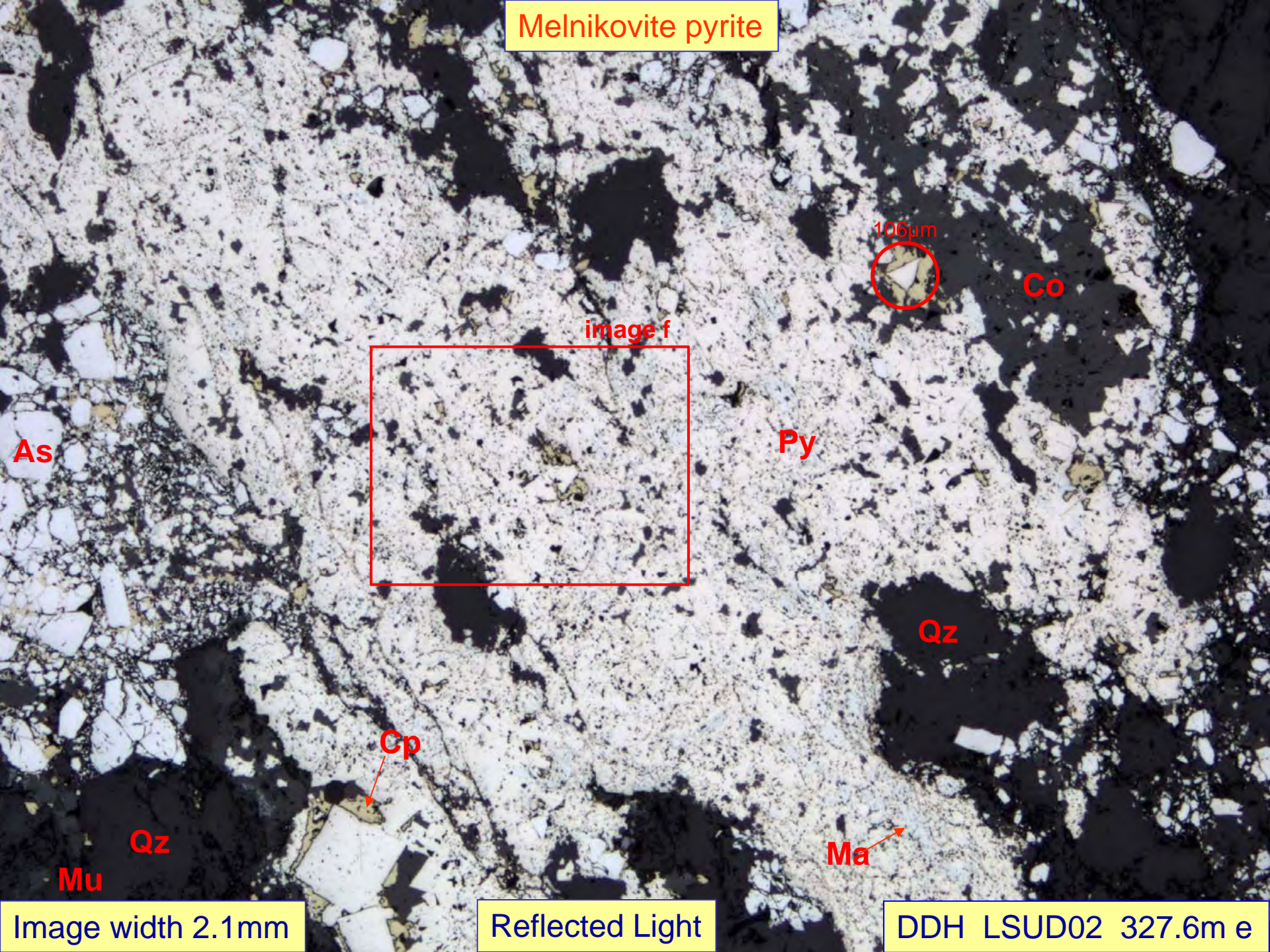
Qz

Image width 515μm

Reflected Light

DDH LSUD02 327.6m d

Melnikovite pyrite



As

image f

106µm

Co

Py

Qz

Cp

Ma

Qz

Mu

Image width 2.1mm

Reflected Light

DDH LSUD02 327.6m e

Detail from previous image

Co

Qz

Ma

As

Py

27µm

Cp

Qz

Image width 515µm

Reflected Light

DDH LSUD02 327.6m f

Ragged cross-cutting carbonate-chalcopyrite veinlets

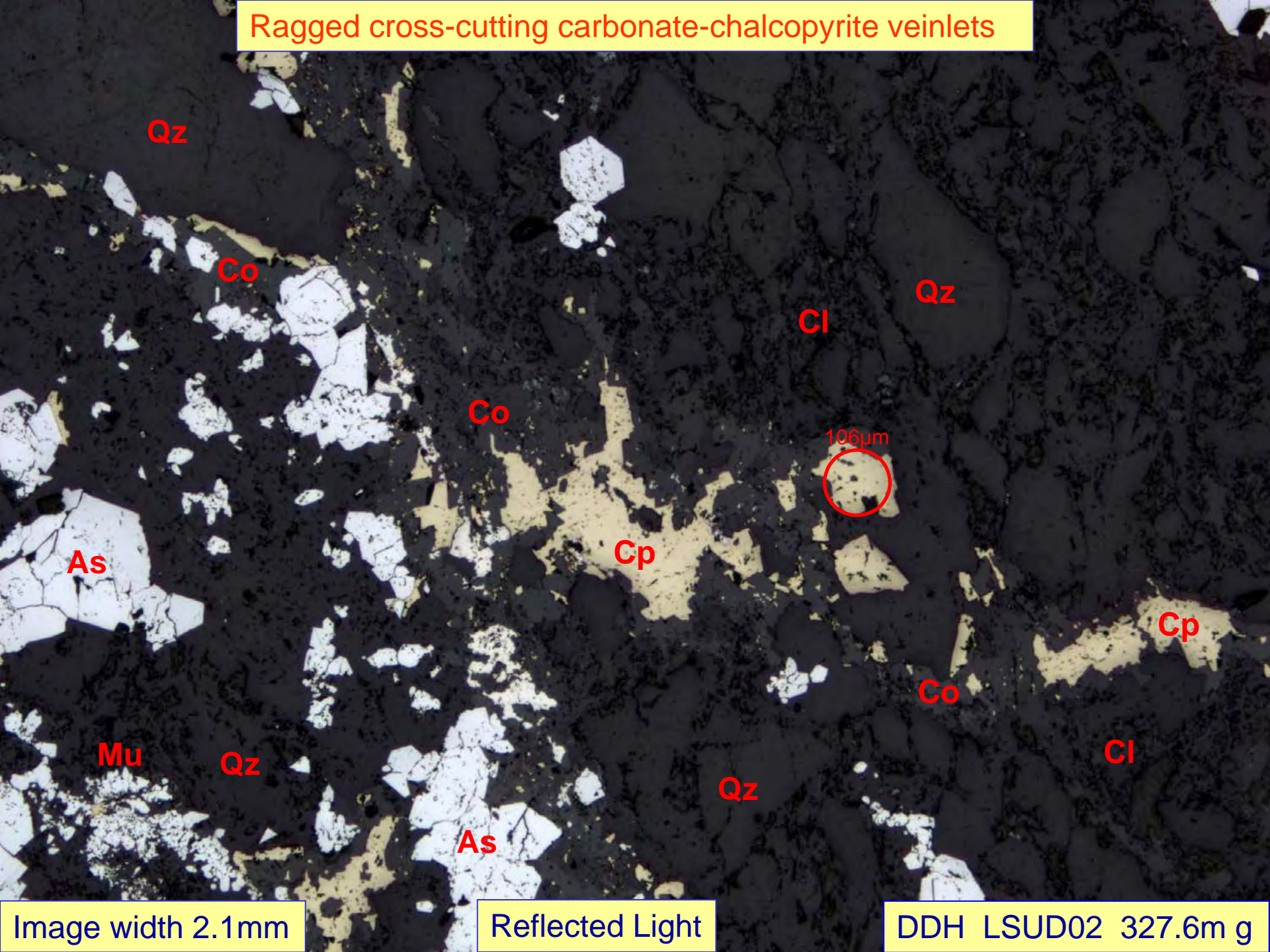
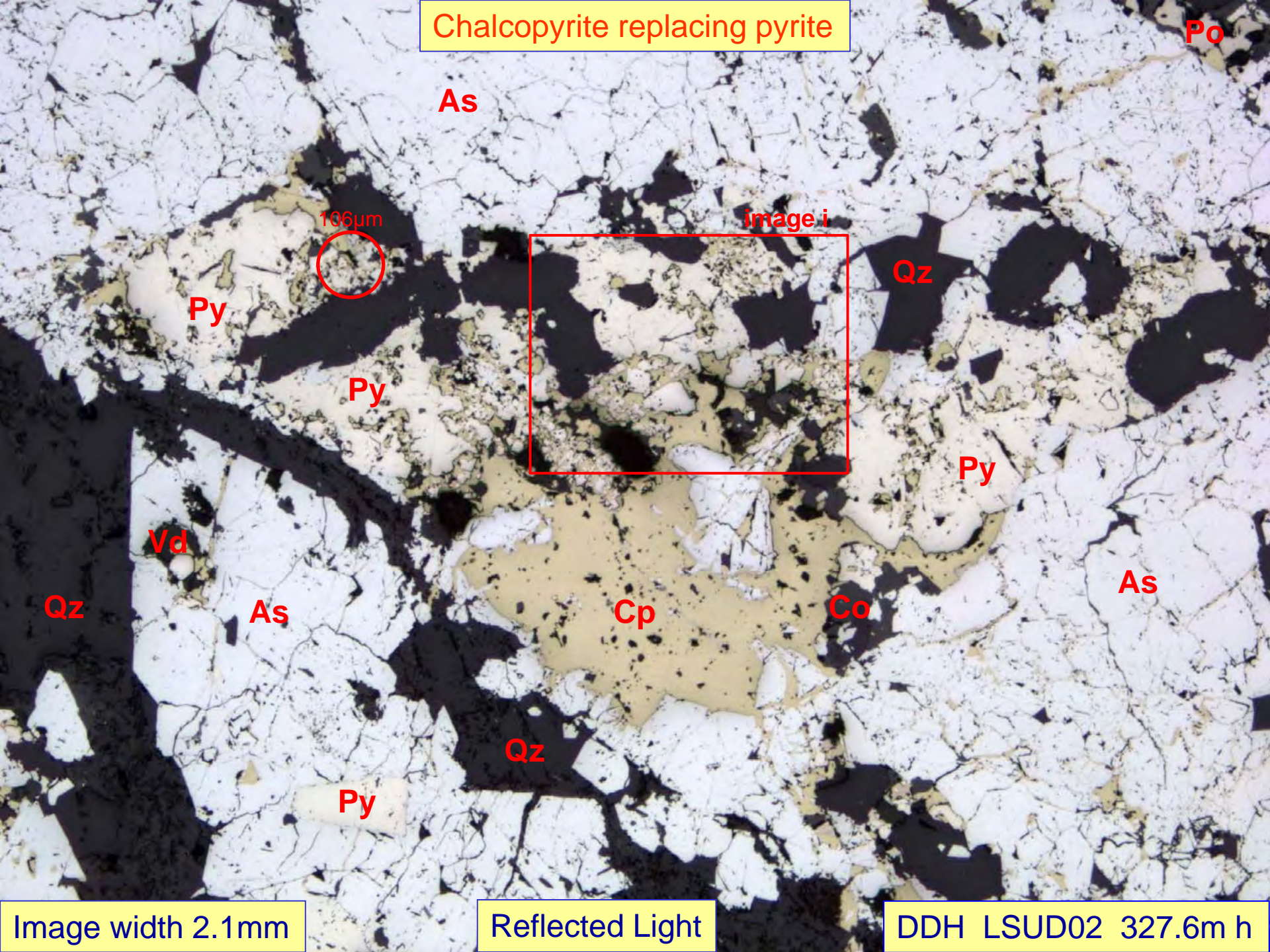


Image width 2.1mm

Reflected Light

DDH LSUD02 327.6m g

Chalcopyrite replacing pyrite



Po

As

Image i

106µm

Py

Qz

Py

Py

Vd

Qz

As

Cp

Co

As

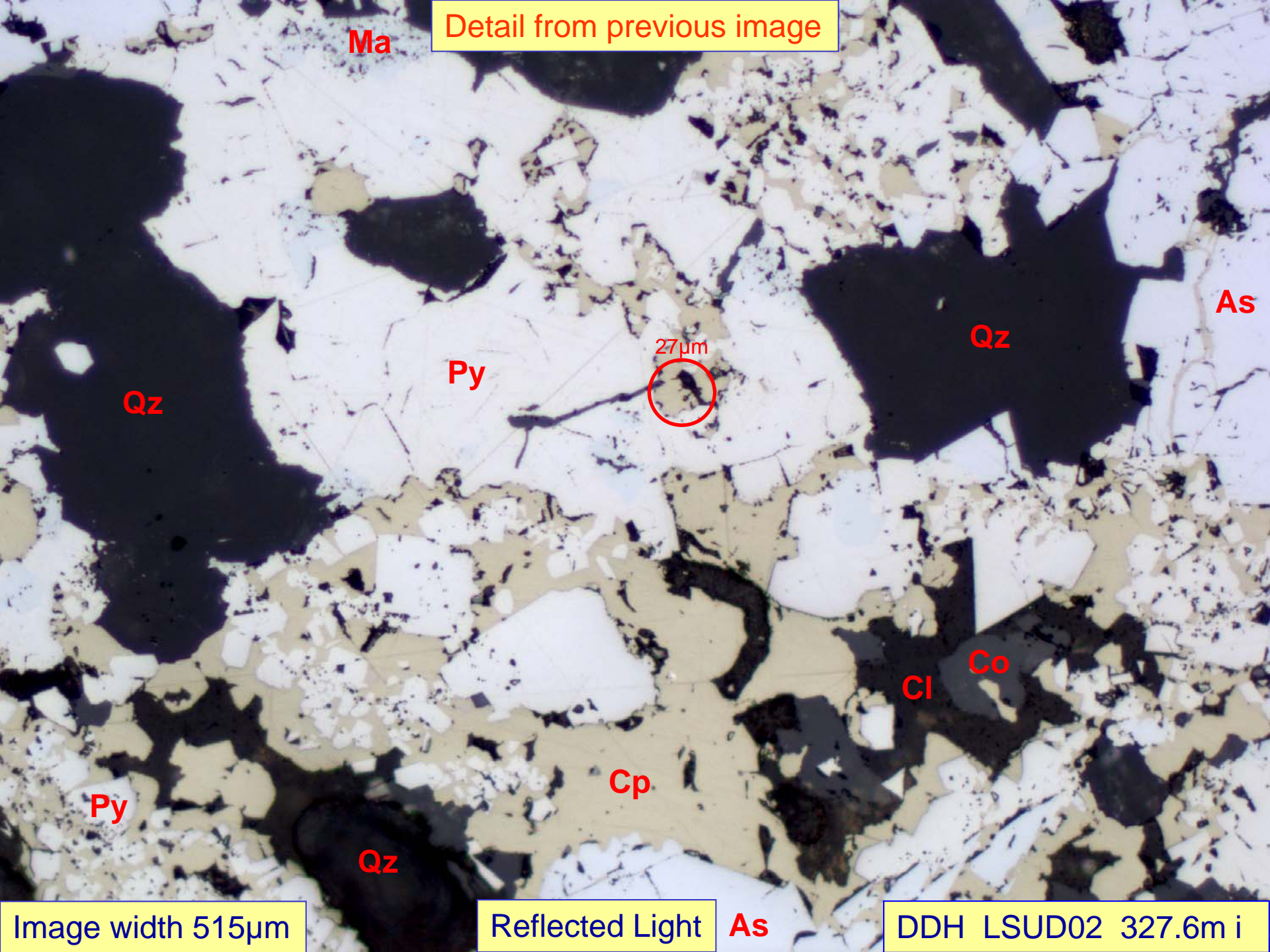
Qz

Py

Image width 2.1mm

Reflected Light

DDH LSUD02 327.6m h



Detail from previous image

Ma

As

Qz

27µm

Py

Qz

Py

Qz

Cp

Cl

Co

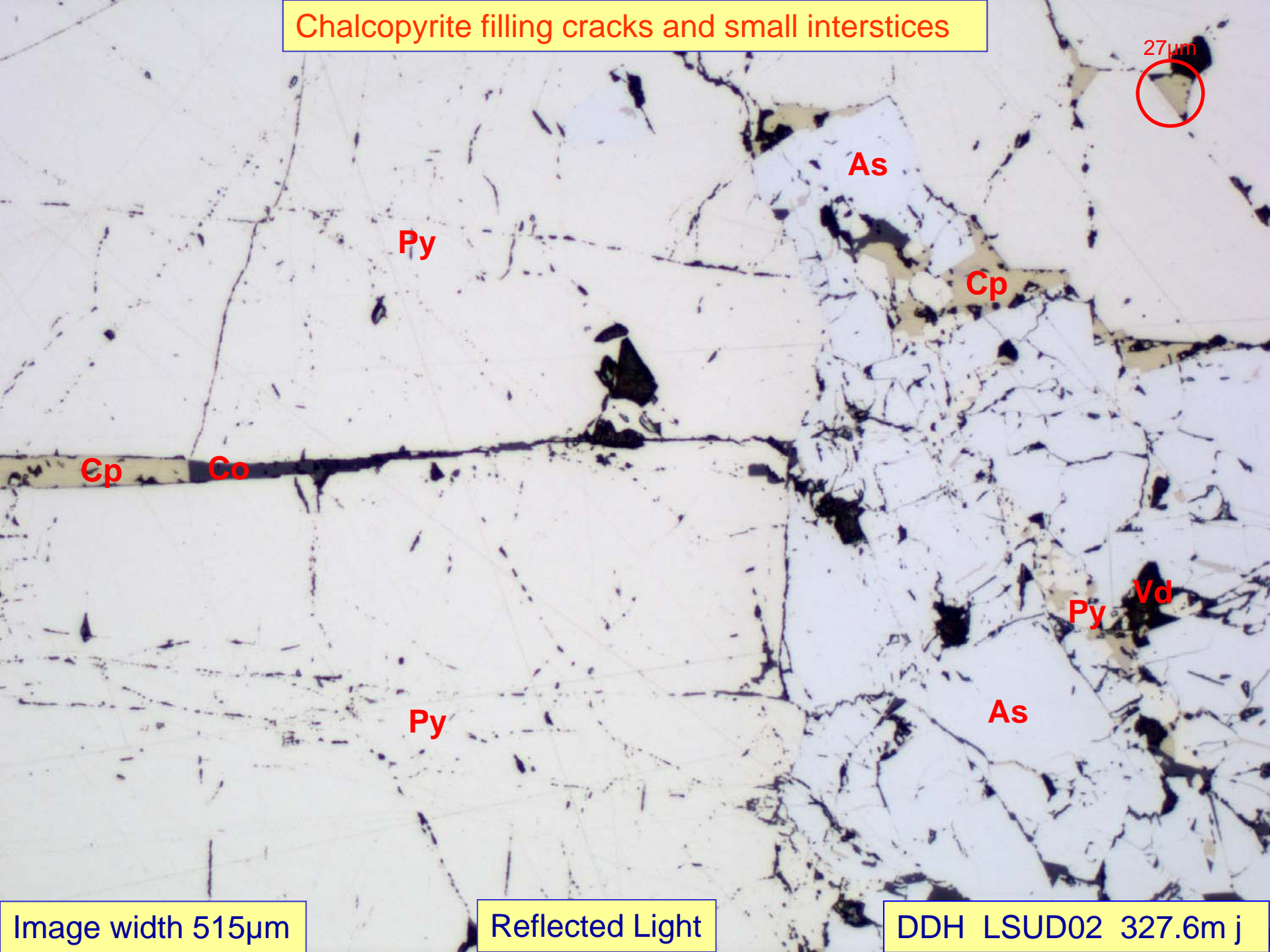
As

Image width 515µm

Reflected Light

DDH LSUD02 327.6m i

Chalcopyrite filling cracks and small interstices



27μm

As

Py

Cp

Cp

Co

Py

Py

Vd

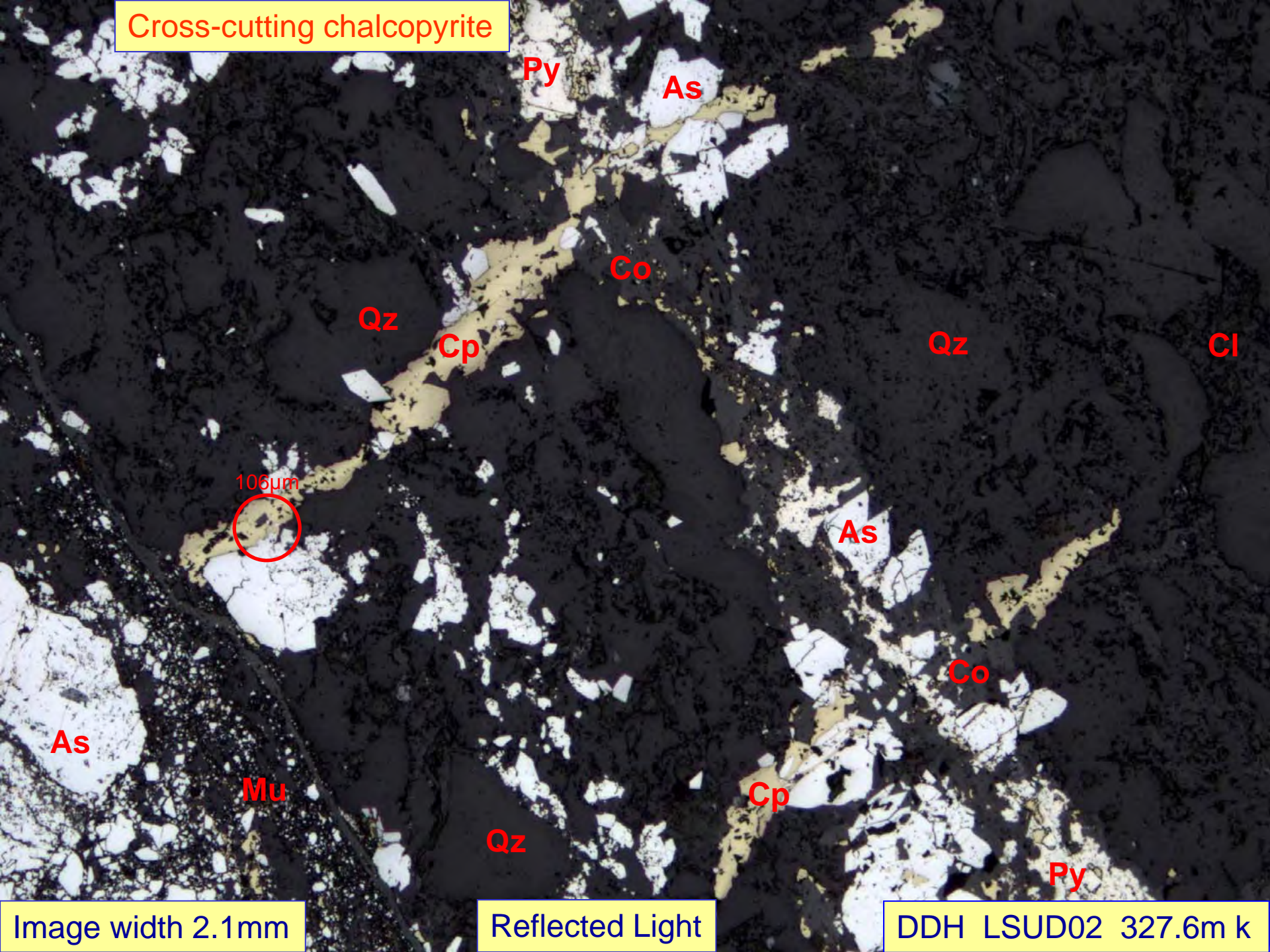
As

Image width 515μm

Reflected Light

DDH LSUD02 327.6m j

Cross-cutting chalcopyrite



Py

As

Co

Qz

Cp

Qz

Cl

106μm

As

As

Mu

Co

Cp

Qz

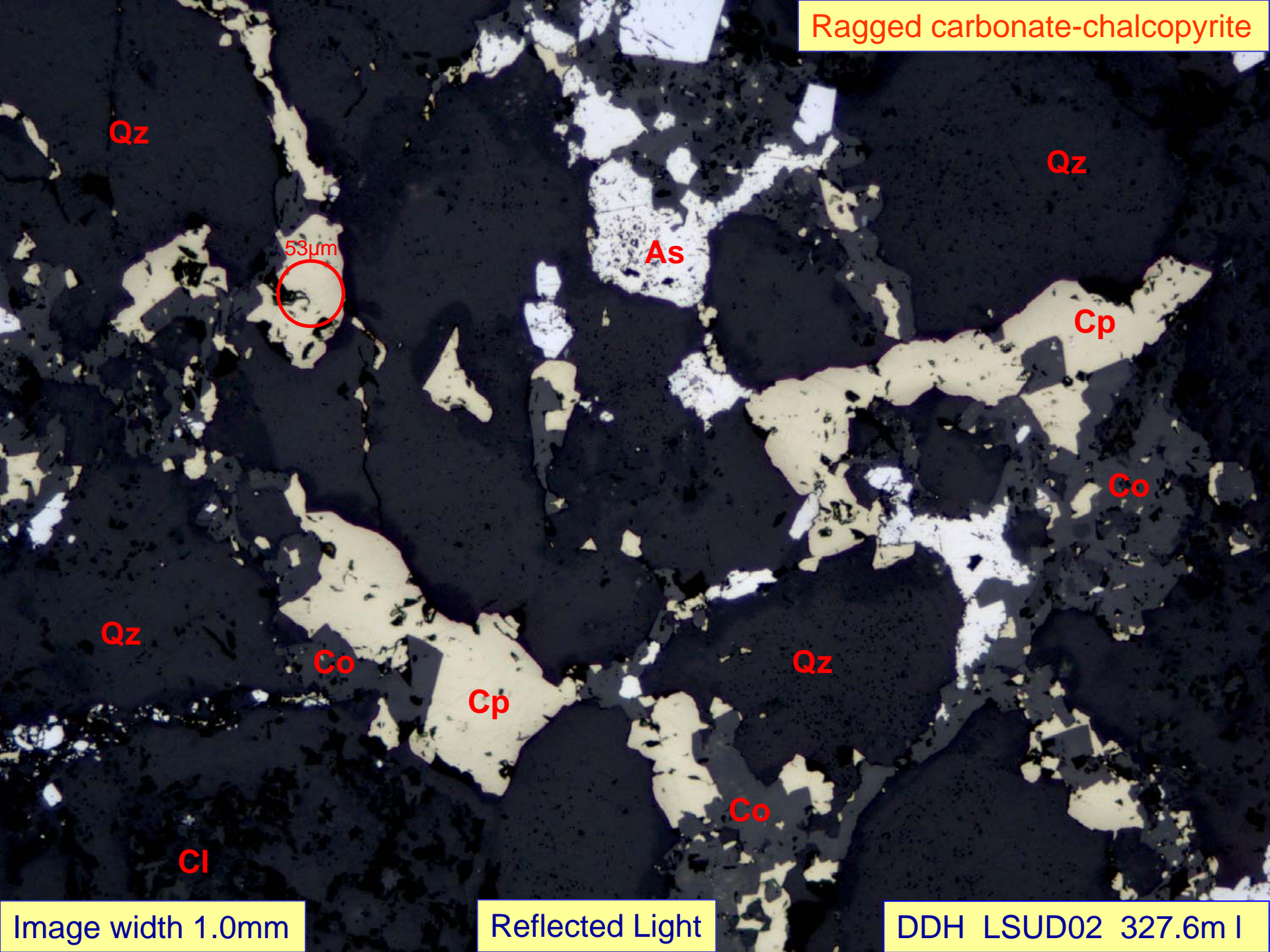
Py

Image width 2.1mm

Reflected Light

DDH LSUD02 327.6m k

Ragged carbonate-chalcopyrite



Qz

Qz

53µm

As

Cp

Co

Qz

Co

Cp

Qz

Co

Cl

Image width 1.0mm

Reflected Light

DDH LSUD02 327.6m I

Offcut Assay

0.28%Cu, 39ppmPb, 90ppmZn, 120ppmBi, 0.25%As, 0.04%Sn, 13.8%S, 9.91ppmAu



Unity Mining Ltd - Lakeside Drillcore Mineralogy

Sample DDH LSUD02 328.0m

GJMcA 12.2.13

Total Scan Data - 530µm Mask

Average composition																			
	Cp	Sp	Gn	Cs	St	Bm	Bi	Py	Me	Ma	Po	As	Qz	Cl	Co	Mu	Ru	Cy	Other
Vol%	3.1	0.0	0.0	0.0	0.0	0.0	0.0	1.4	0.0	0.0	6.8	0.0	61.1	24.5	0.0	3.1	0.0	0.0	0.0
Wt%	4.5	0.0	0.0	0.0	0.0	0.0	0.0	2.4	0.0	0.0	10.9	0.0	56.1	22.8	0.0	3.1	0.0	0.0	0.0

ASSAYS										ppm
SG	%Cu	%Pb	%Zn	%As	%Sn	%Bi	%Fe	Au		
2.85	1.56	0.00	0.01	0.00	0.00	0.03	12.0			
Actual	0.28	0.00	0.01	0.25	0.04	0.01		9.91		

Mineral Abbreviations			
Cp	Chalcopyrite	Ma	Marcasite
Sp	Sphalerite	Po	Pyrrhotite
Gn	Galena	As	Arsenopyrite
Cs	Cassiterite	Qz	Quartz
St	Stannite	Cl	Chlorite
Bm	Bismuthinite	Co	Carbonate
Bi	Native Bismuth	Mu	Muscovite
Py	Pyrite	Ru	Rutile
Me	Melnikovite	Cy	Clay

Economic Mineral Scan Data - 53µm Mask

COMPOSITE PROPORTIONS							
	Cp	Sp	Gn	Cs	St	Bm	Bi
Mono	4	0	0	0	0	0	0
Binary	25	0	0	0	0	0	0
Ternary	56	36	0	100	0	50	0
Quat.y+	15	64	0	0	100	50	0

BINARY ASSOCIATION MATRIX													
	Cp	Sp	Gn	Cs	St	Bm	Bi	Py	Me	Ma	Po	As	Ga
Cp		0	0	0	0	0	0	0	0	0	13	0	12
Sp	0		0	0	0	0	0	0	0	0	0	0	0
Gn	0	0		0	0	0	0	0	0	0	0	0	0
Cs	0	0	0		0	0	0	0	0	0	0	0	0
St	0	0	0	0		0	0	0	0	0	0	0	0
Bm	0	0	0	0	0		0	0	0	0	0	0	0
Bi	0	0	0	0	0	0		0	0	0	0	0	0

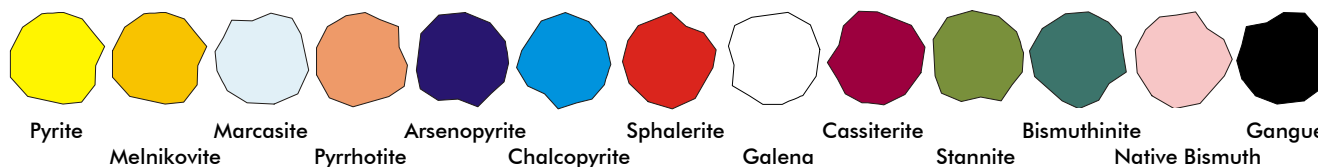
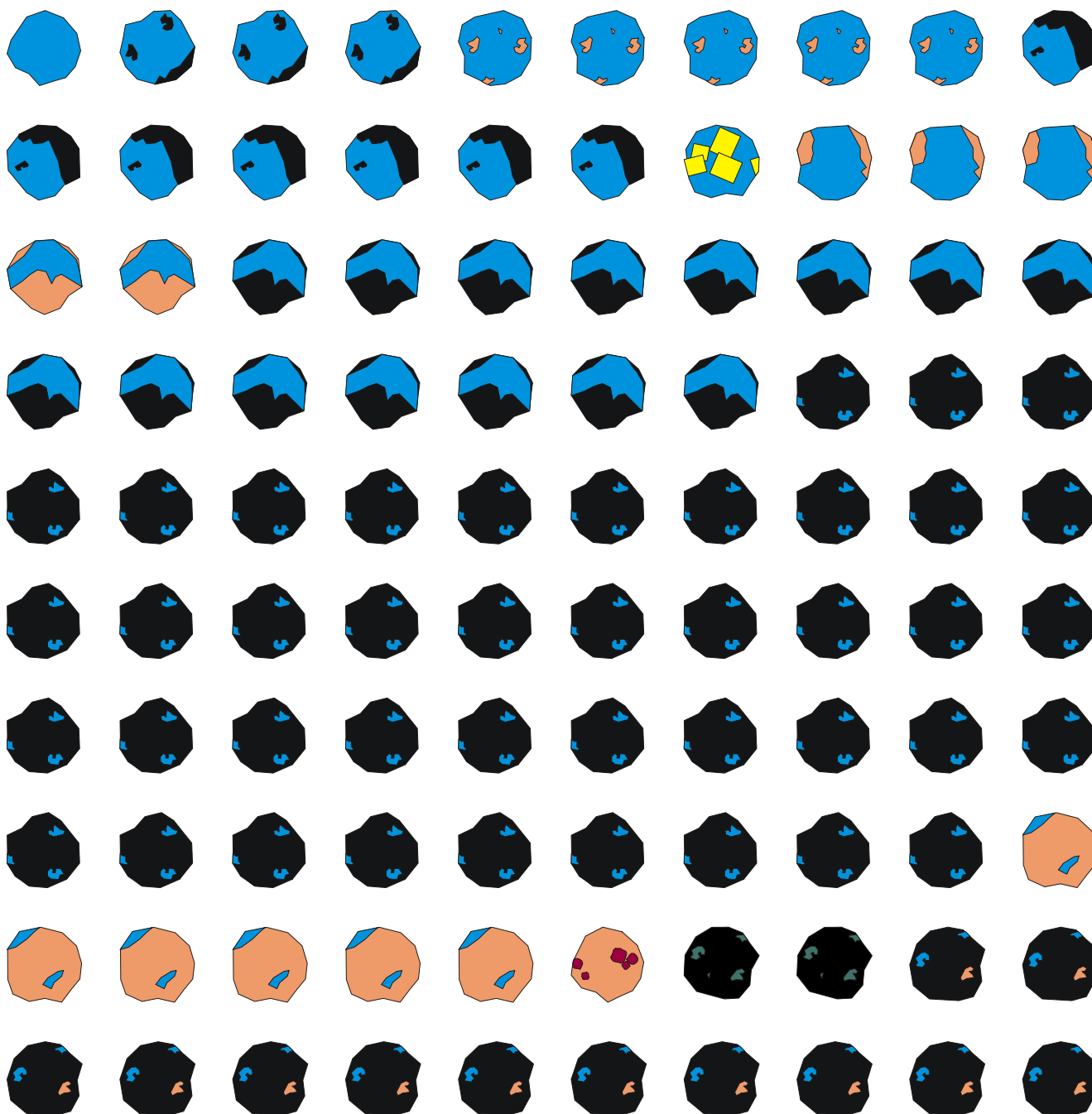
TOTAL ASSOCIATION MATRIX													
	Cp	Sp	Gn	Cs	St	Bm	Bi	Py	Me	Ma	Po	As	Ga
Cp		10	0	0	0	0	0	2	0	0	60	0	77
Sp	100		0	0	0	0	0	0	0	0	91	0	73
Gn	0	0		0	0	0	0	0	0	0	0	0	0
Cs	0	0	0		0	0	0	0	0	0	100	0	100
St	100	0	0	0		0	0	50	0	0	0	0	100
Bm	50	0	0	0	0		0	0	0	0	0	0	100
Bi	0	0	0	0	0	0		0	0	0	0	0	0

Unity Mining - Lakeside Drillcore Mineralogy

DDH LSUD02 328.0m
Cu-Sn-Bi-Zn-Pb SCAN

53µm Mask

February 2013



General low-magnification view

Au=gold
Cl=chlorite
Co=carbonate
Cp=chalcopyrite
Gn=galena
Ma=marcasite
Mt=magnetite
Mu=muscovite
Po=pyrrhotite
Py=pyrite
Qz=quartz
Ru=rutile
Sp=sphalerite
St=stannite
Vd=void

500µm

Py

Po

Cp

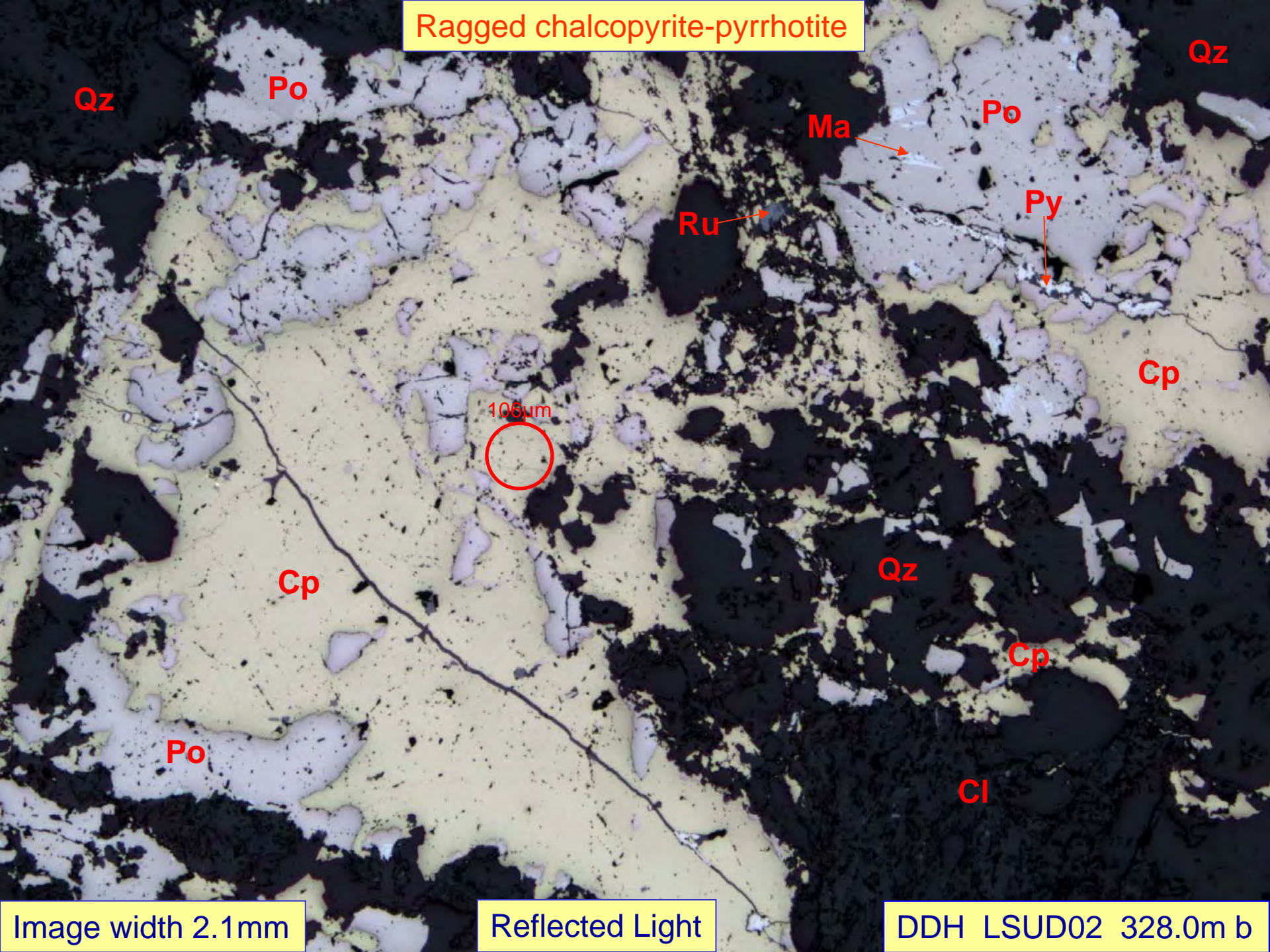
Qz

Image width 8.2mm

Reflected Light

DDH LSUD02 328.0m a

Ragged chalcopyrite-pyrrhotite



Qz

Po

Qz

Ma

Po

Ru

Py

Cp

100µm

Cp

Qz

Cp

Po

Cl

Image width 2.1mm

Reflected Light

DDH LSUD02 328.0m b

Ragged chalcopyrite-pyrrhotite

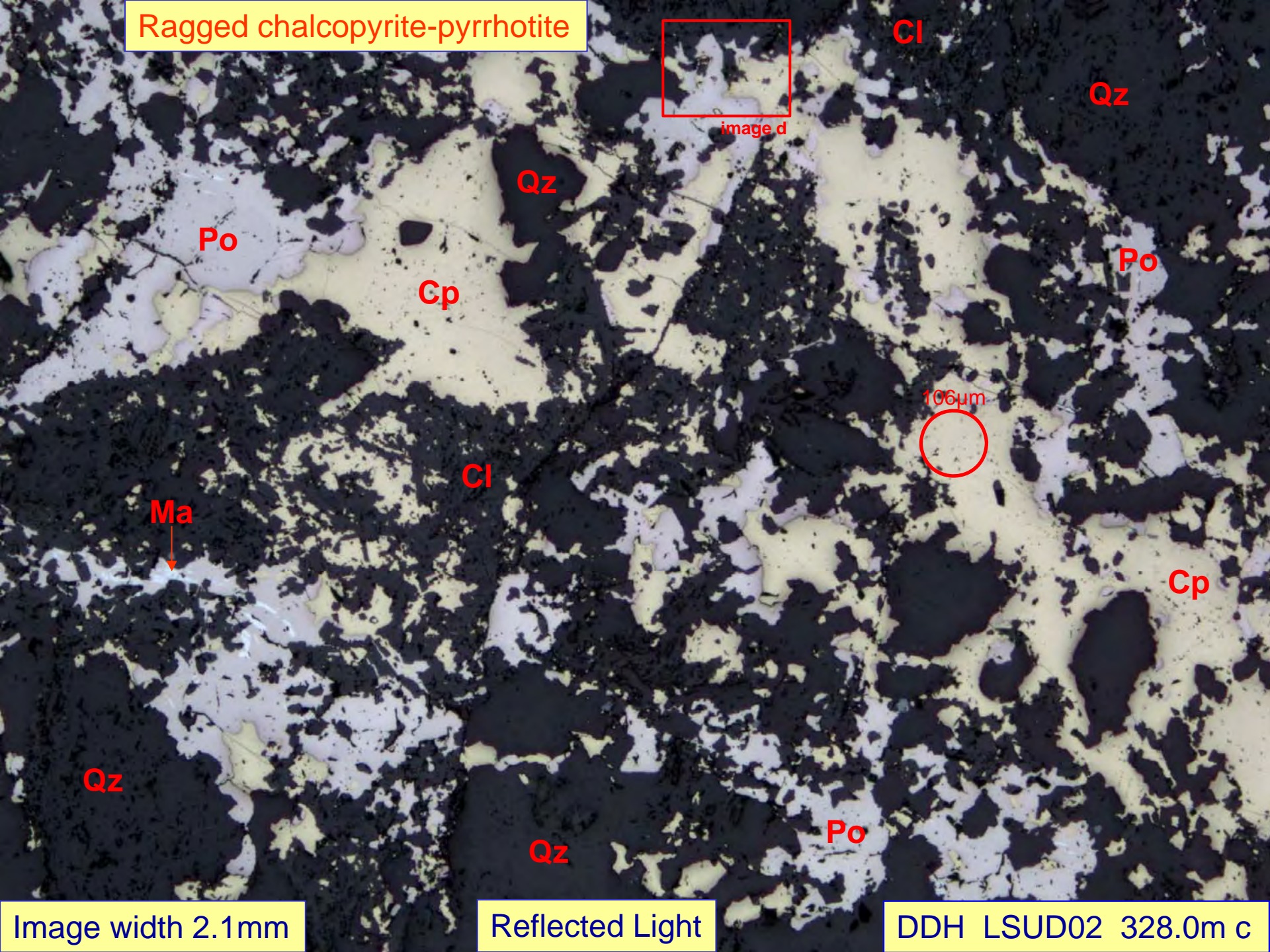


Image width 2.1mm

Reflected Light

DDH LSUD02 328.0m c

Detail of gold occurrence from previous image

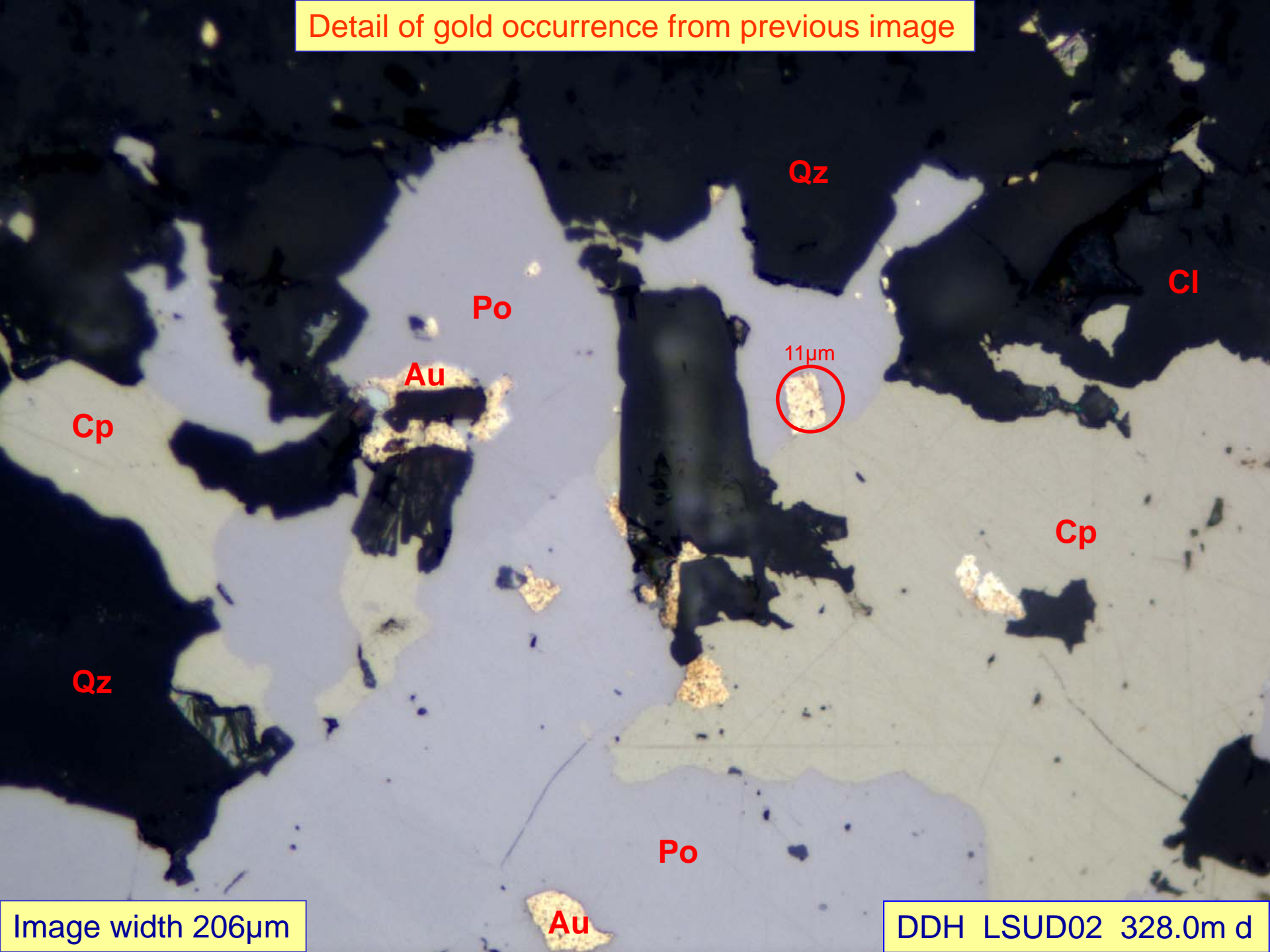


Image width 206µm

DDH LSUD02 328.0m d

Offset on micro-fault

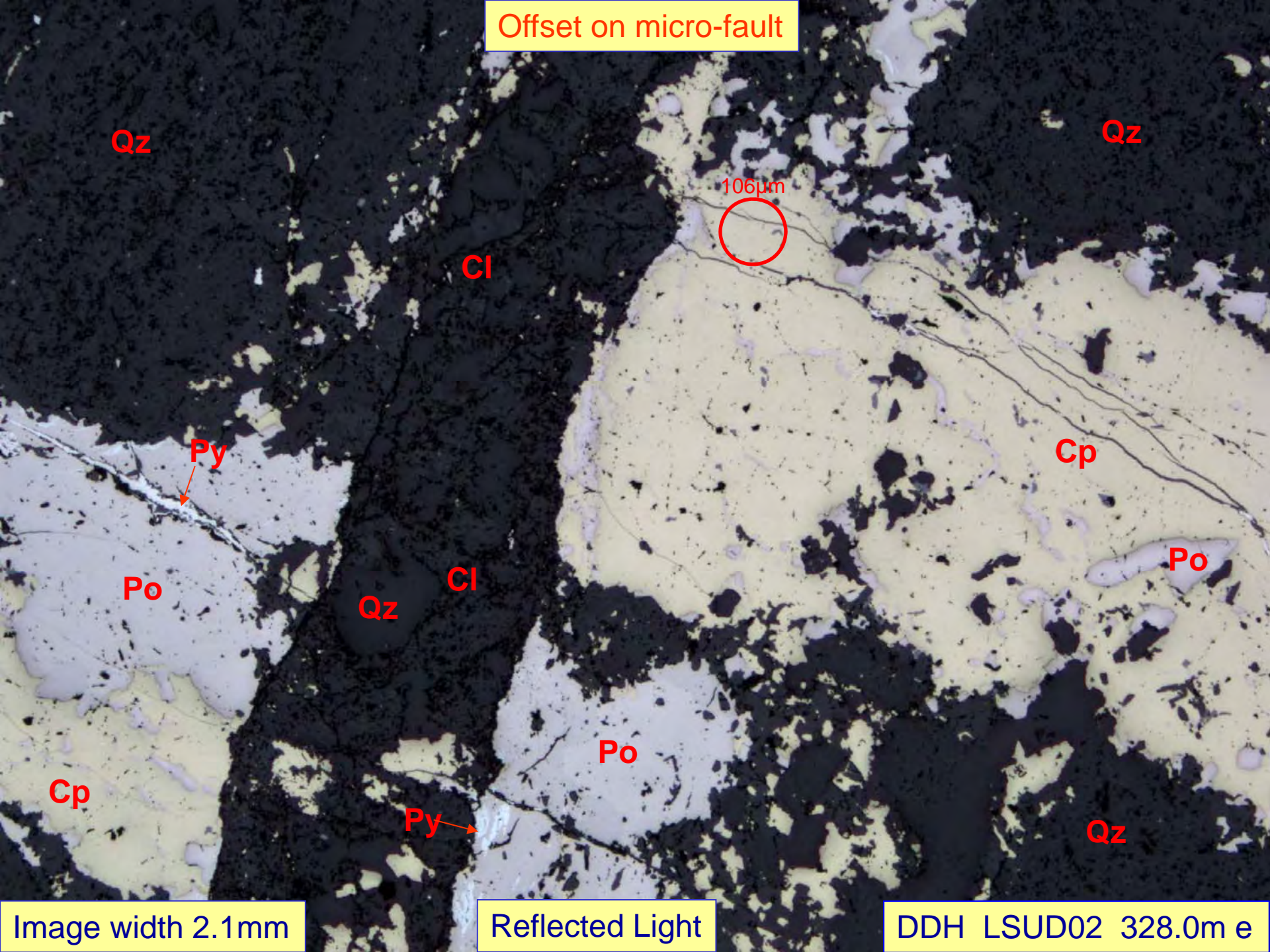
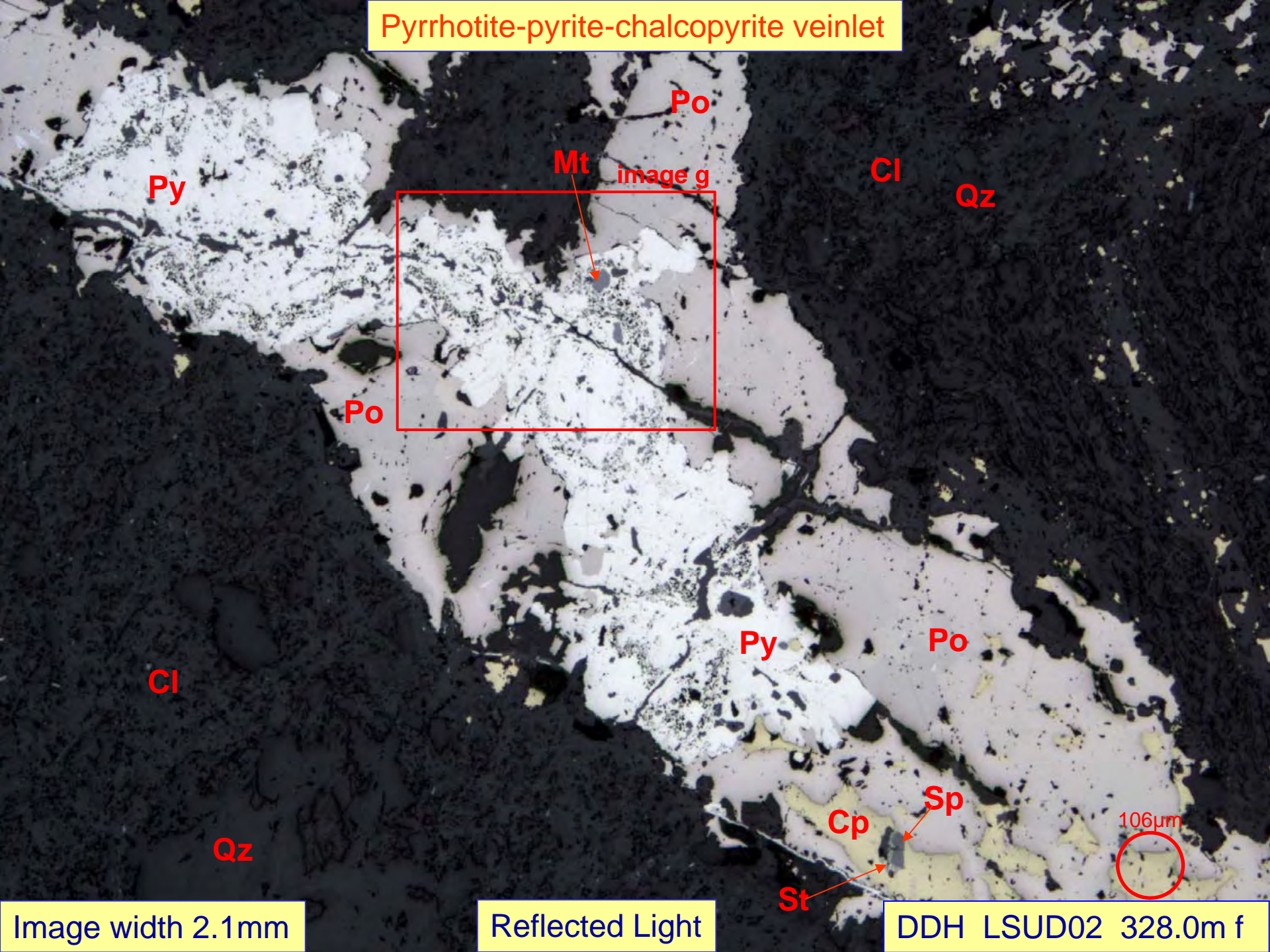


Image width 2.1mm

Reflected Light

DDH LSUD02 328.0m e

Pyrrhotite-pyrite-chalcopyrite veinlet



Py

Po

Mt

image g

Cl

Qz

Po

Cl

Qz

Py

Po

Sp

Cp

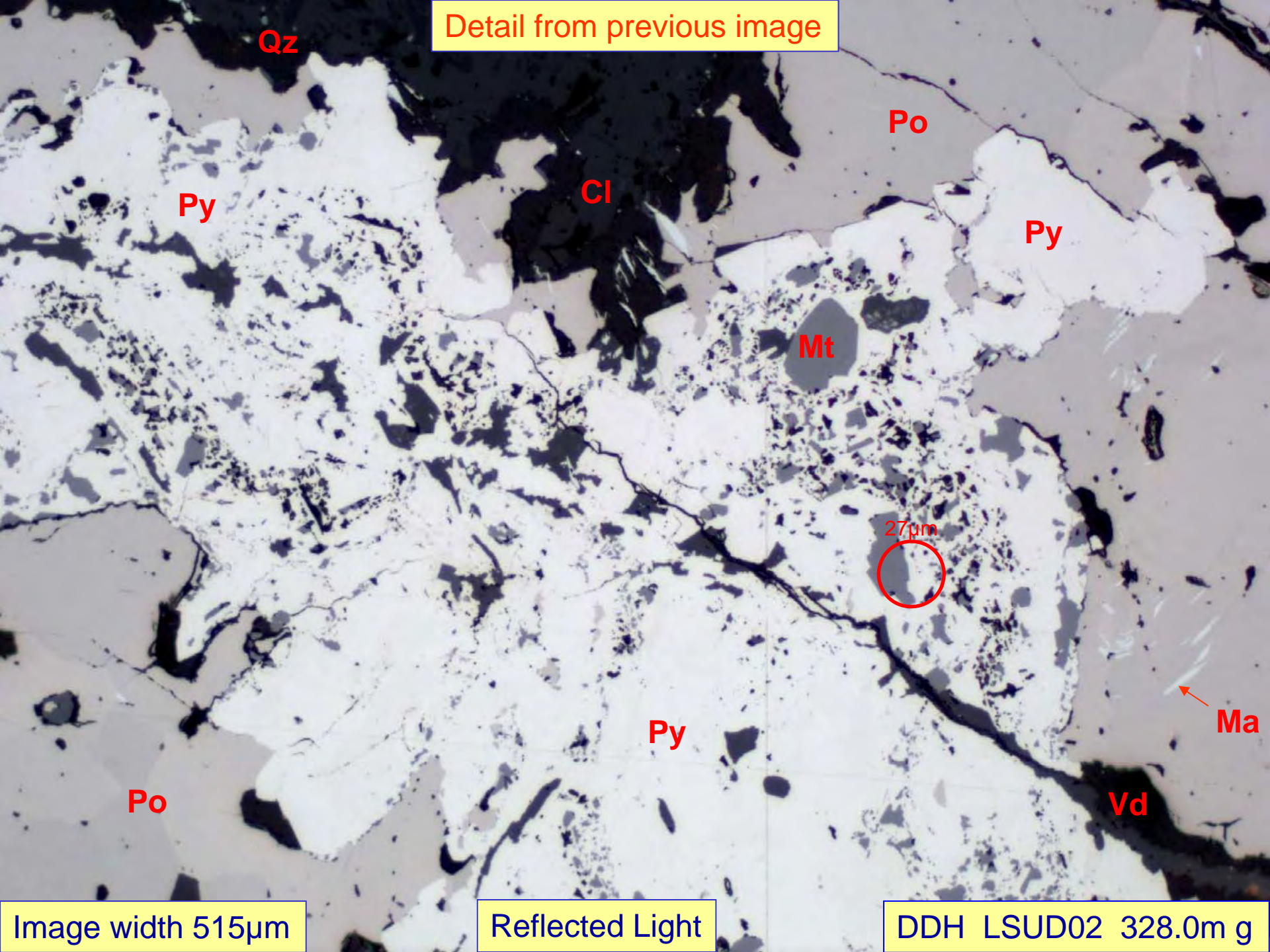
St

106µm

Image width 2.1mm

Reflected Light

DDH LSUD02 328.0m f



Detail from previous image

Qz

Po

Py

Cl

Py

Mt

27µm

Ma

Po

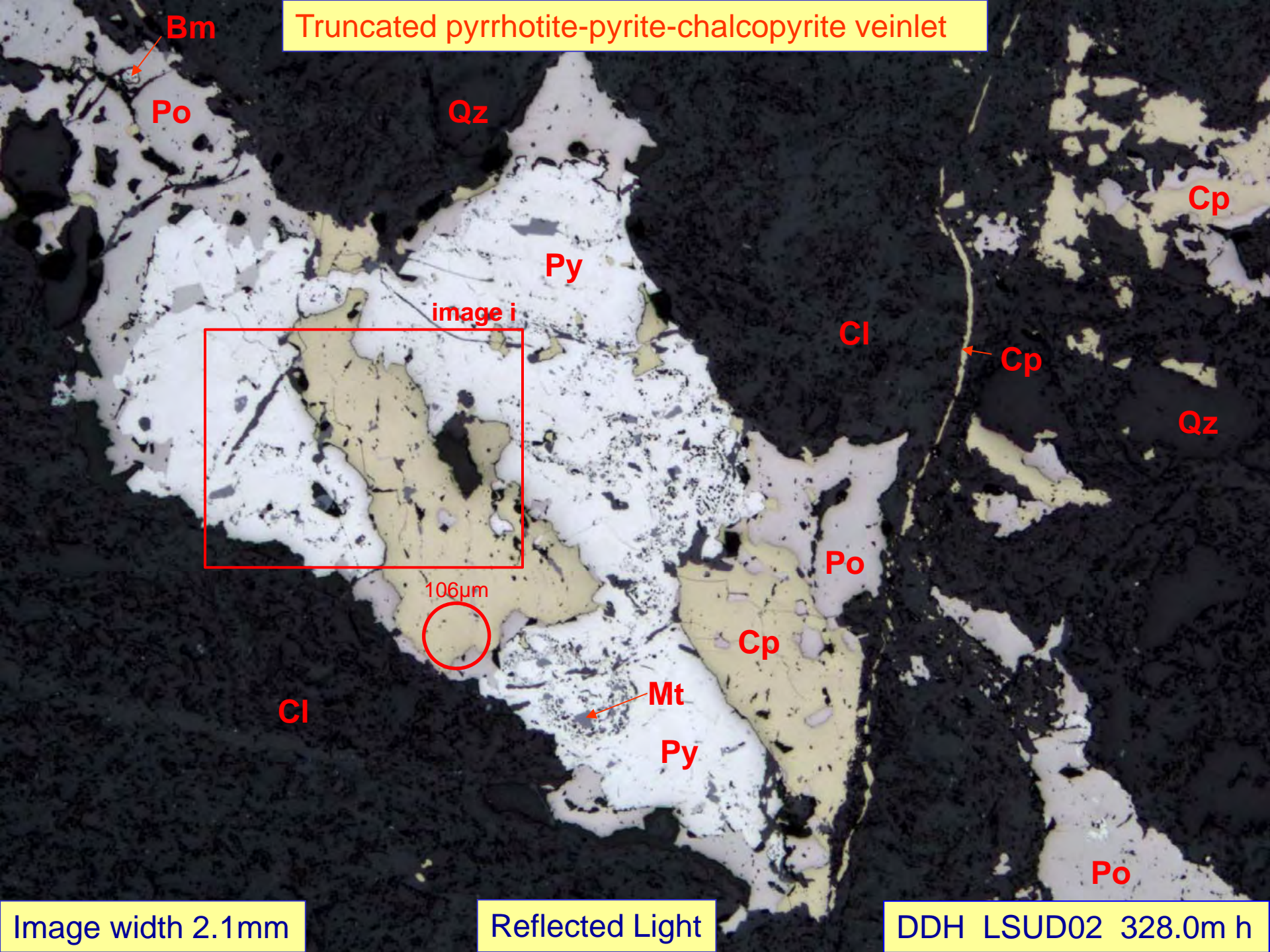
Py

Vd

Image width 515µm

Reflected Light

DDH LSUD02 328.0m g



Truncated pyrrhotite-pyrite-chalcopyrite veinlet

Bm

Po

Qz

Py

image i

Cl

Cp

Cp

Qz

Po

106µm

Cp

Cl

Mt

Py

Po

Image width 2.1mm

Reflected Light

DDH LSUD02 328.0m h

Sphalerite in detail from previous image

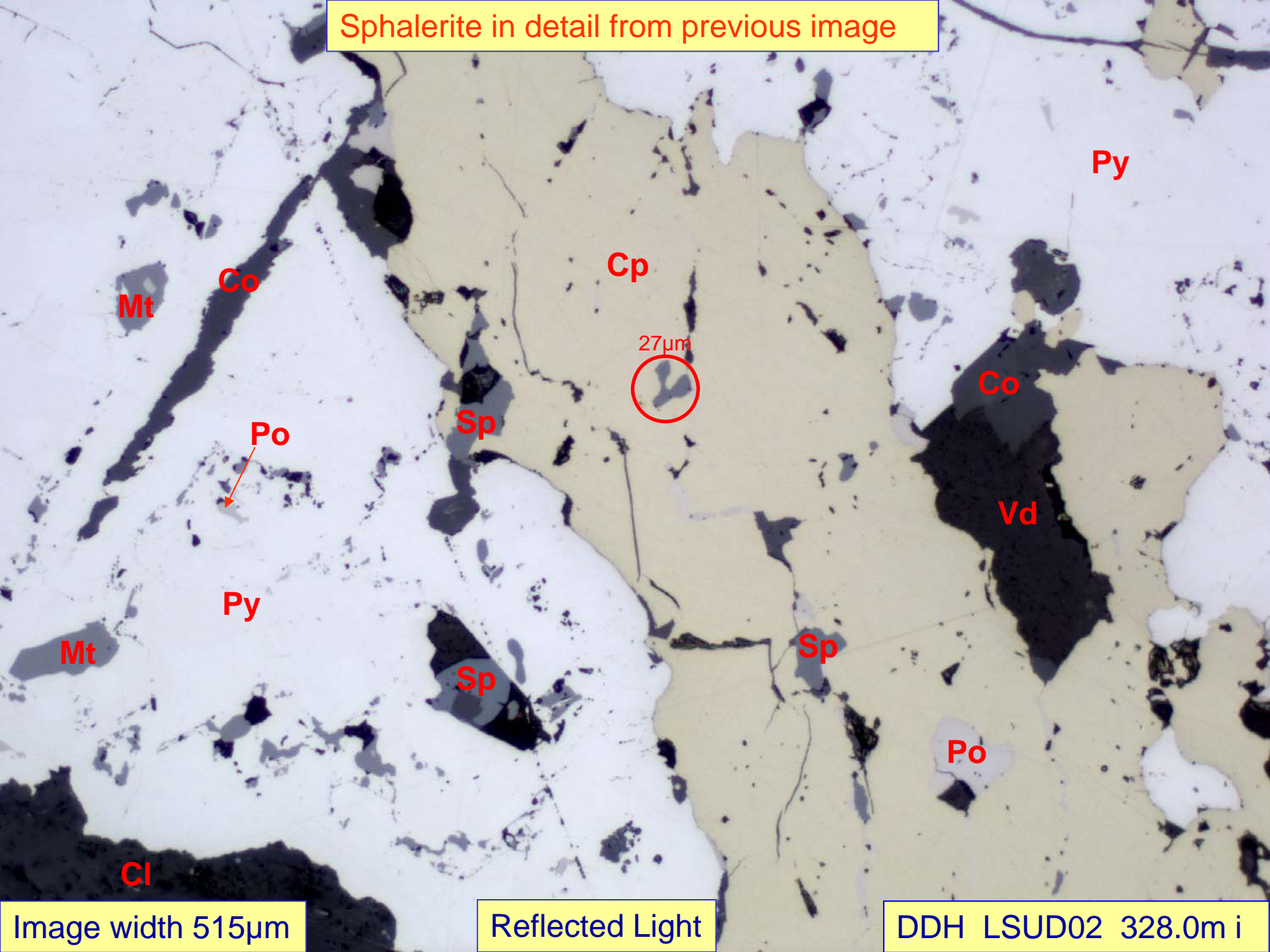


Image width 515µm

Reflected Light

DDH LSUD02 328.0m i

Uncommon gold in pyrite

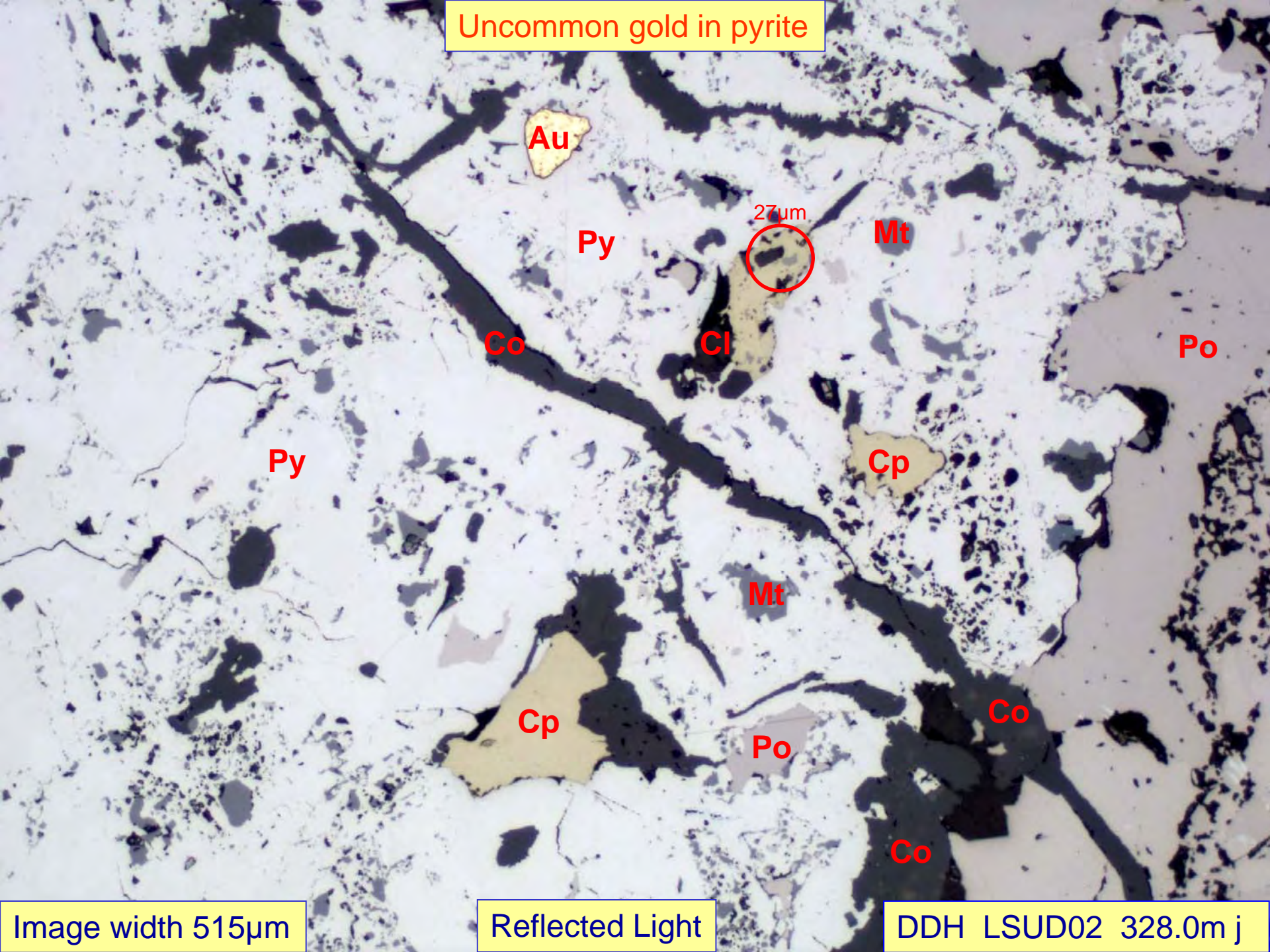


Image width 515µm

Reflected Light

DDH LSUD02 328.0m j

Detail of chalcopyrite-stannite

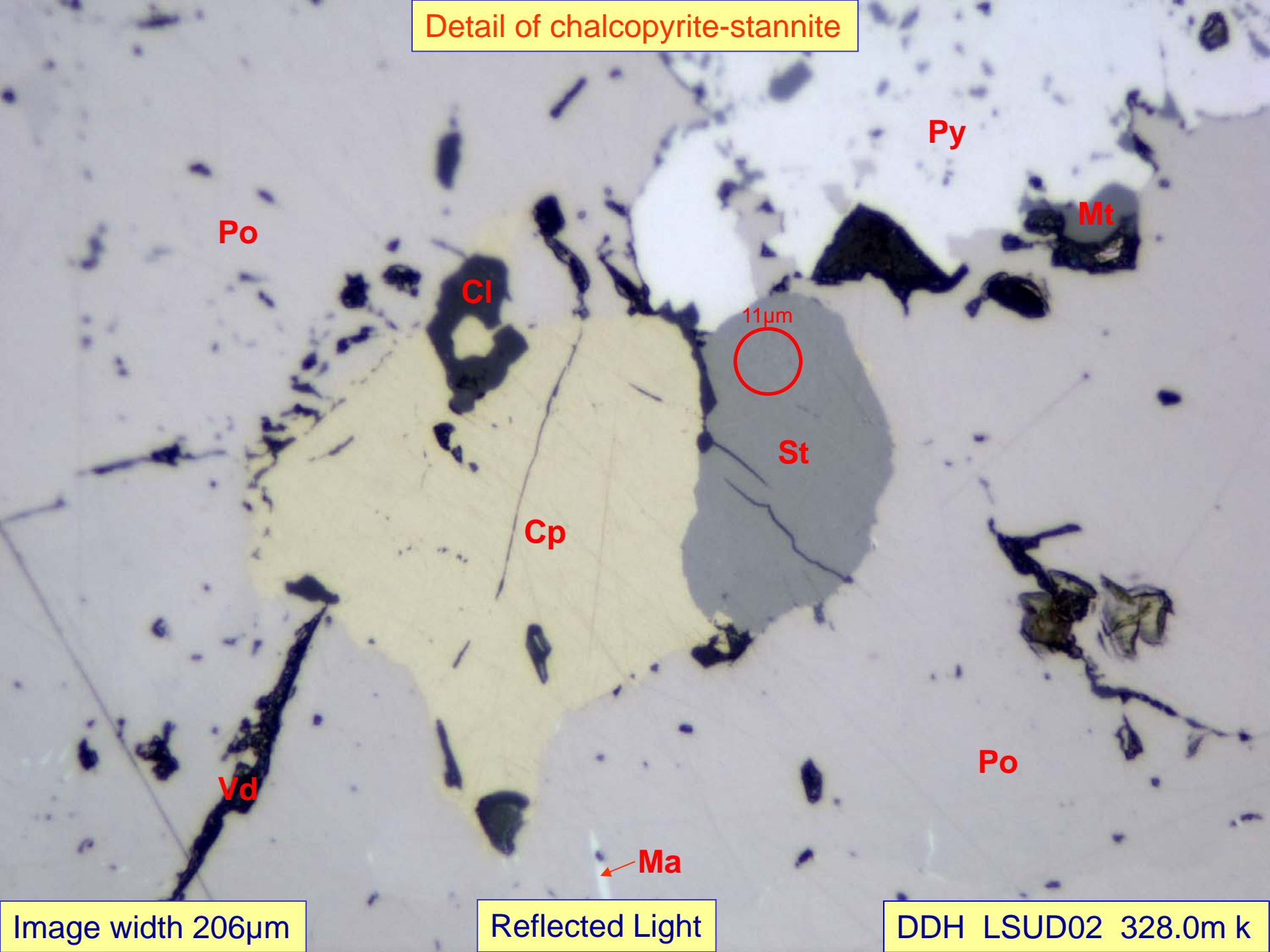
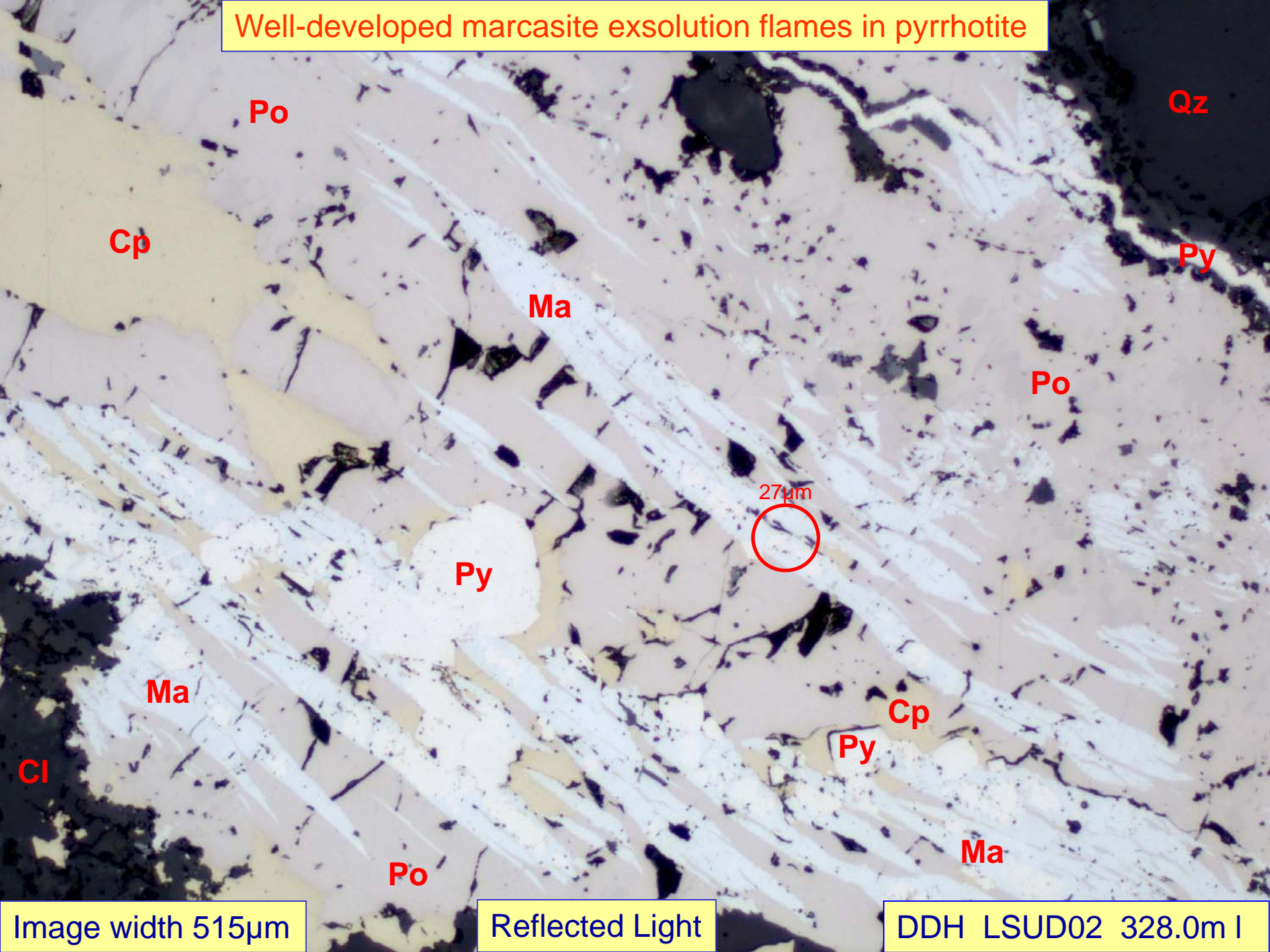


Image width 206µm

Reflected Light

DDH LSUD02 328.0m k

Well-developed marcasite exsolution flames in pyrrhotite



Po

Qz

Cp

Py

Ma

Po

27µm

Py

Ma

Cp

Py

Ma

Po

Cl

Image width 515µm

Reflected Light

DDH LSUD02 328.0m I

Shattered pyrite rehealed by pyrrhotite-chalcopyrite

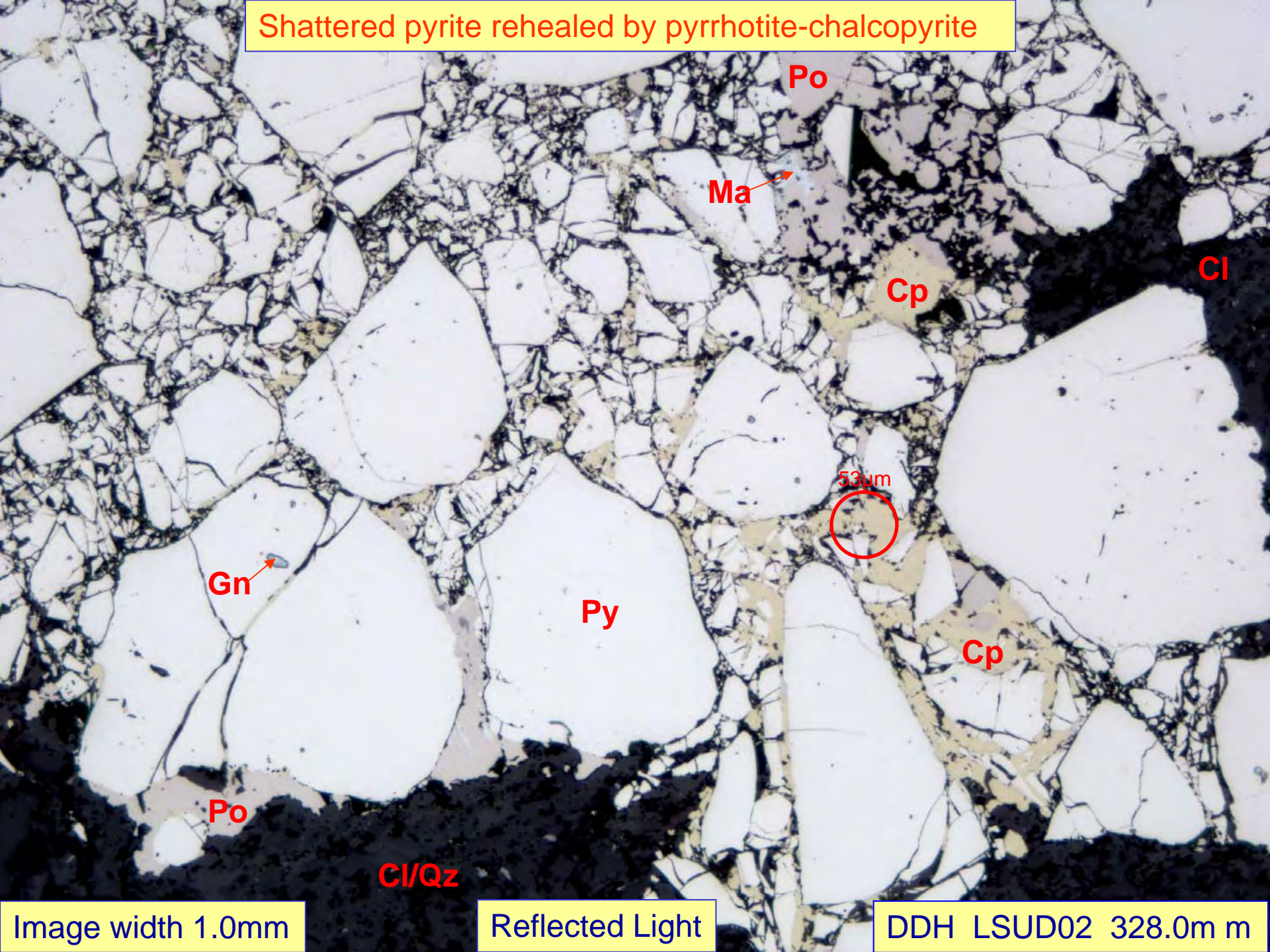


Image width 1.0mm

Reflected Light

DDH LSUD02 328.0m m

Scattered bismuth with pyrrhotite

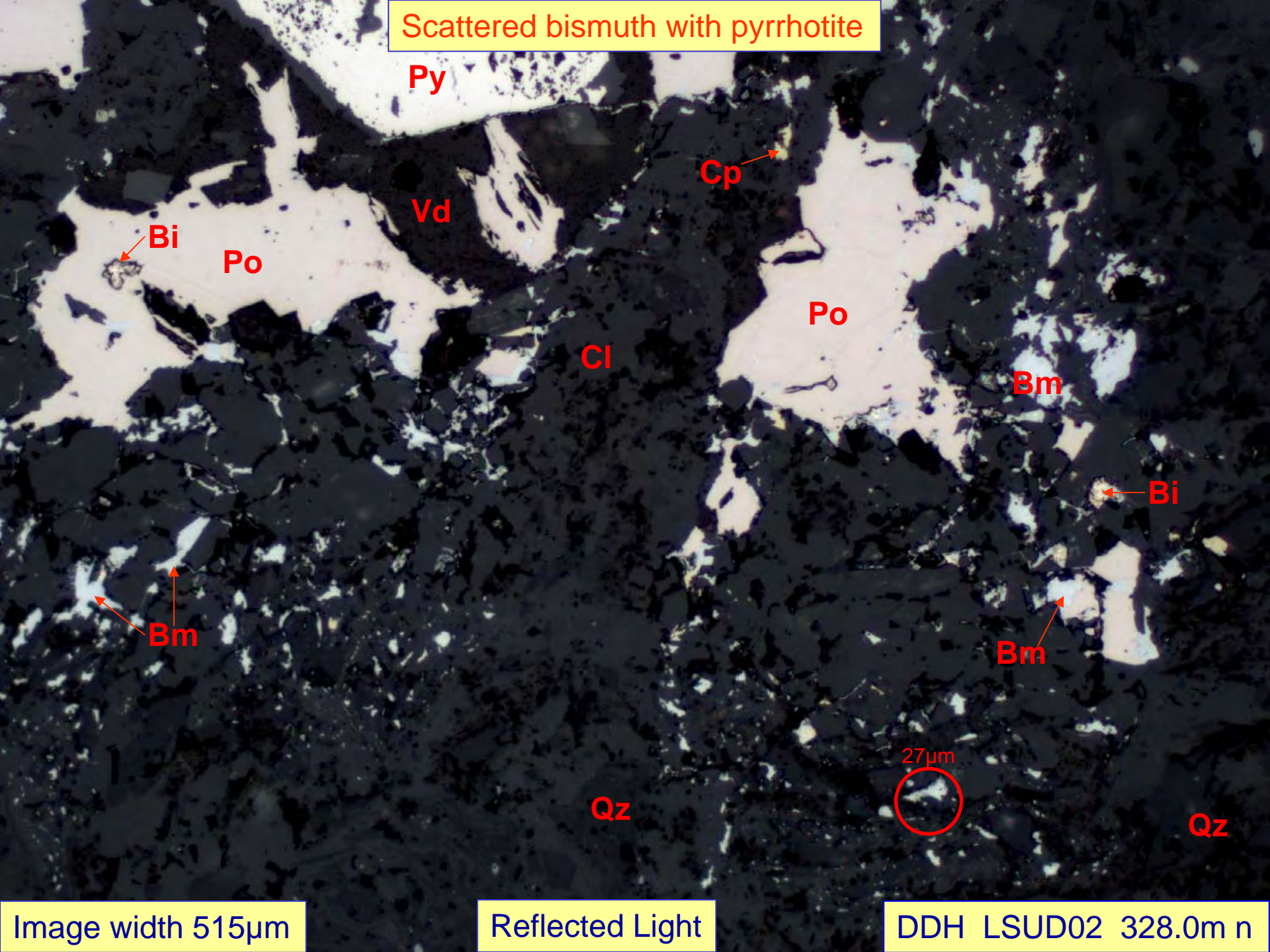


Image width 515µm

Reflected Light

DDH LSUD02 328.0m n

Detail of gold occurrence

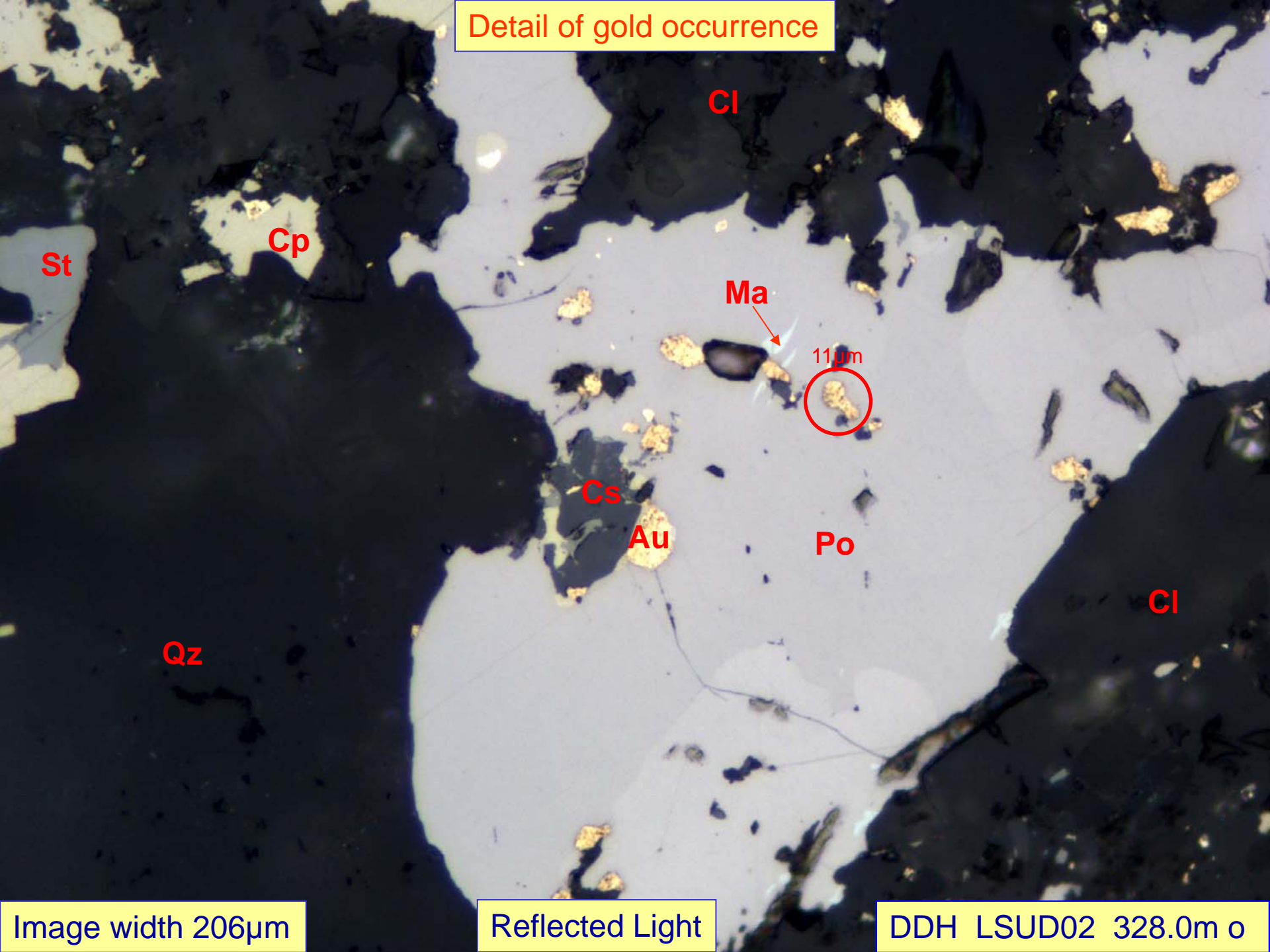
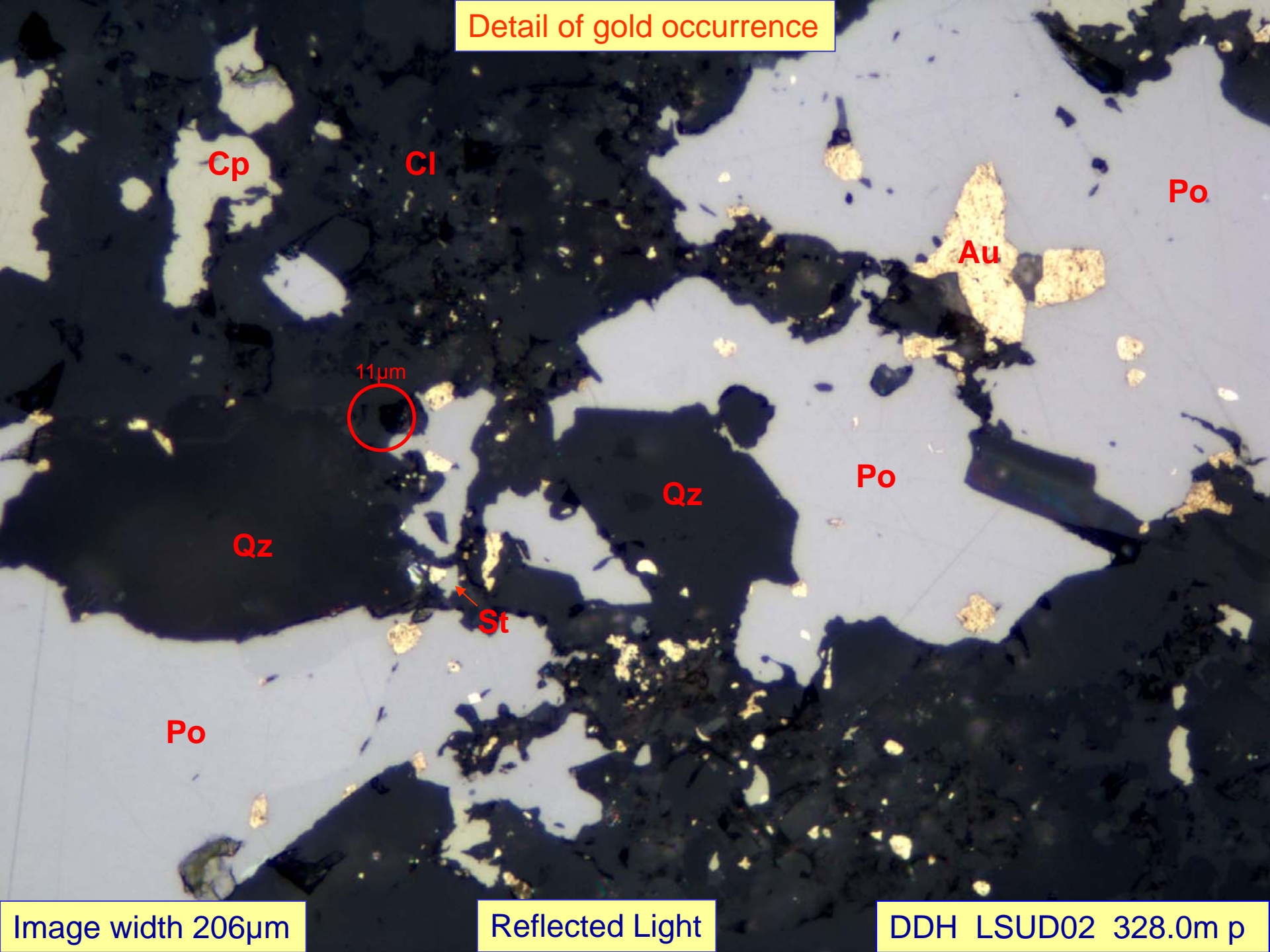


Image width 206µm

Reflected Light

DDH LSUD02 328.0m o

Detail of gold occurrence



Cp

Cl

Po

Au

11µm

Qz

Po

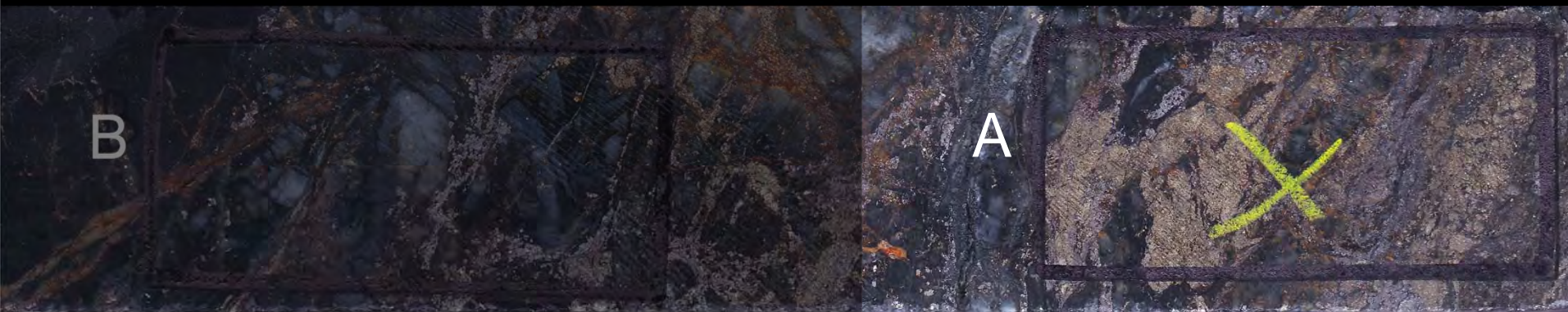
Qz

St

Po

Offcut Assay

0.75%Cu, 0.37%Pb, 0.35%Zn, 171ppmBi, 6.91%As, 0.84%Sn, 13.6%S, 3.04ppmAu



Unity Mining Ltd - Lakeside Drillcore Mineralogy

Sample DDH LSUD02 328.25m A

GJMcA 13.2.13

Total Scan Data - 530µm Mask

Average composition																			
	Cp	Sp	Gn	Cs	St	Bm	Bi	Py	Me	Ma	Po	As	Qz	Cl	Co	Mu	Ru	Cy	Other
Vol%	1.8	2.7	0.1	0.0	1.9	0.0	0.0	33.0	0.6	0.0	1.2	13.7	25.8	17.9	0.0	1.4	0.0	0.0	0.0
Wt%	1.8	2.7	0.1	0.0	2.1	0.0	0.0	41.1	0.7	0.0	1.4	20.6	16.8	11.8	0.0	1.0	0.0	0.0	0.0

ASSAYS										ppm
SG	%Cu	%Pb	%Zn	%As	%Sn	%Bi	%Fe	Au		
Calc'd	4.03	1.24	0.10	1.76	9.48	0.57	0.00	29.6		
Actual	0.75	0.37	0.35	6.91	0.84	0.02		3.04		

Mineral Abbreviations			
Cp	Chalcopyrite	Ma	Marcasite
Sp	Sphalerite	Po	Pyrrhotite
Gn	Galena	As	Arsenopyrite
Cs	Cassiterite	Qz	Quartz
St	Stannite	Cl	Chlorite
Bm	Bismuthinite	Co	Carbonate
Bi	Native Bismuth	Mu	Muscovite
Py	Pyrite	Ru	Rutile
Me	Melnikovite	Cy	Clay

Economic Mineral Scan Data - 53µm Mask

COMPOSITE PROPORTIONS							
	Cp	Sp	Gn	Cs	St	Bm	Bi
Mono	0	0	0	0	0	0	0
Binary	16	0	8	0	0	0	0
Ternary	17	28	6	0	2	0	0
Quat.y+	68	72	86	0	98	100	99

BINARY ASSOCIATION MATRIX													
	Cp	Sp	Gn	Cs	St	Bm	Bi	Py	Me	Ma	Po	As	Ga
Cp		0	0	0	0	0	0	0	0	0	0	0	16
Sp	0		0	0	0	0	0	0	0	0	0	0	0
Gn	0	0		0	0	0	0	8	0	0	0	0	0
Cs	0	0	0		0	0	0	0	0	0	0	0	0
St	0	0	0	0		0	0	0	0	0	0	0	0
Bm	0	0	0	0	0		0	0	0	0	0	0	0
Bi	0	0	0	0	0	0		0	0	0	0	0	0

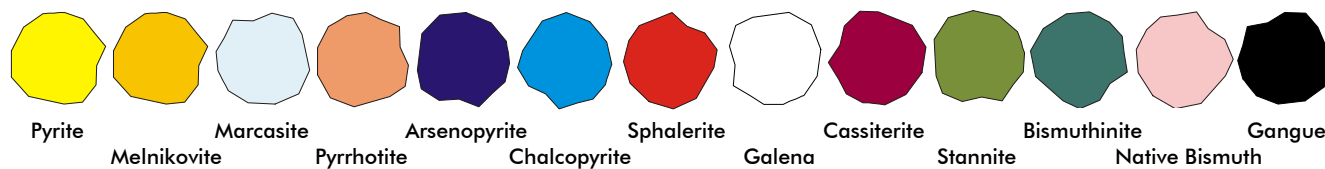
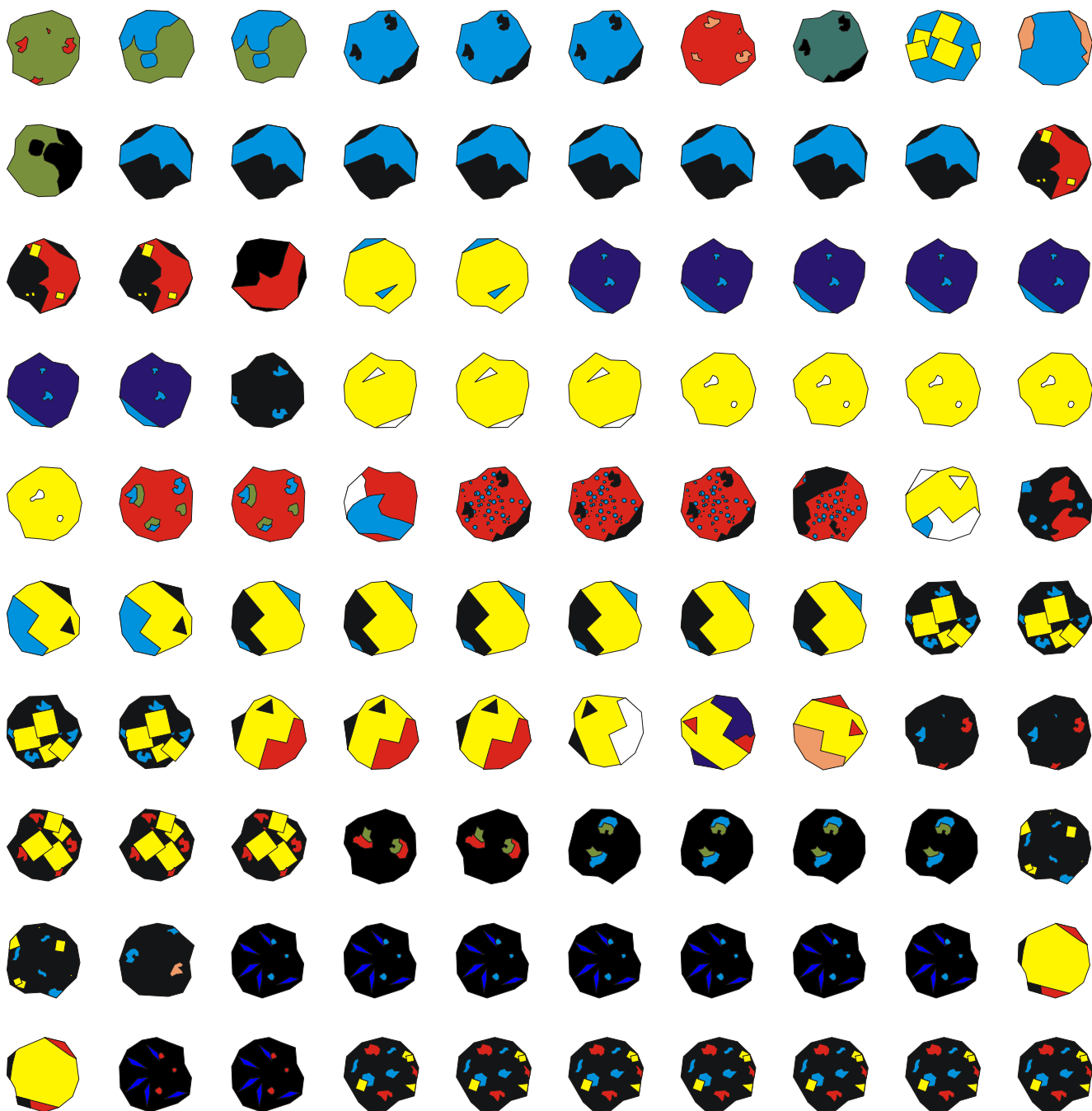
TOTAL ASSOCIATION MATRIX													
	Cp	Sp	Gn	Cs	St	Bm	Bi	Py	Me	Ma	Po	As	Ga
Cp		26	29	0	28	1	1	51	0	3	21	30	91
Sp	94		7	0	41	4	1	45	0	0	24	14	90
Gn	77	36		0	35	0	0	67	0	17	15	11	79
Cs	0	0	0		0	0	0	0	0	0	0	0	0
St	94	76	17	0		0	0	36	0	2	1	19	98
Bm	85	100	0	0	0		85	15	0	0	0	85	100
Bi	99	99	0	0	0	99		0	0	0	0	99	99

Unity Mining - Lakeside Drillcore Mineralogy

DDH LSUD02 328.25m
A Cu-Sn-Bi-Zn-Pb SCAN

53µm Mask

February 2013



General low-magnification view

As=arsenopyrite
Bi=native bismuth
Bm=bismuthinite
Cl=chlorite
Cp=chalcopyrite
Gn=galena
Ma=marcasite
Po=pyrrhotite
Py=pyrite
Qz=quartz
Sp=sphalerite
St=stannite

500µm

Qz

Py

Cl

Sp

As

St

Cp

Image width 8.2mm

Reflected Light

DDH LSUD02 328.25m A a

Arsenopyrite with interstitial chalcopyrite-stannite-bismuthinite

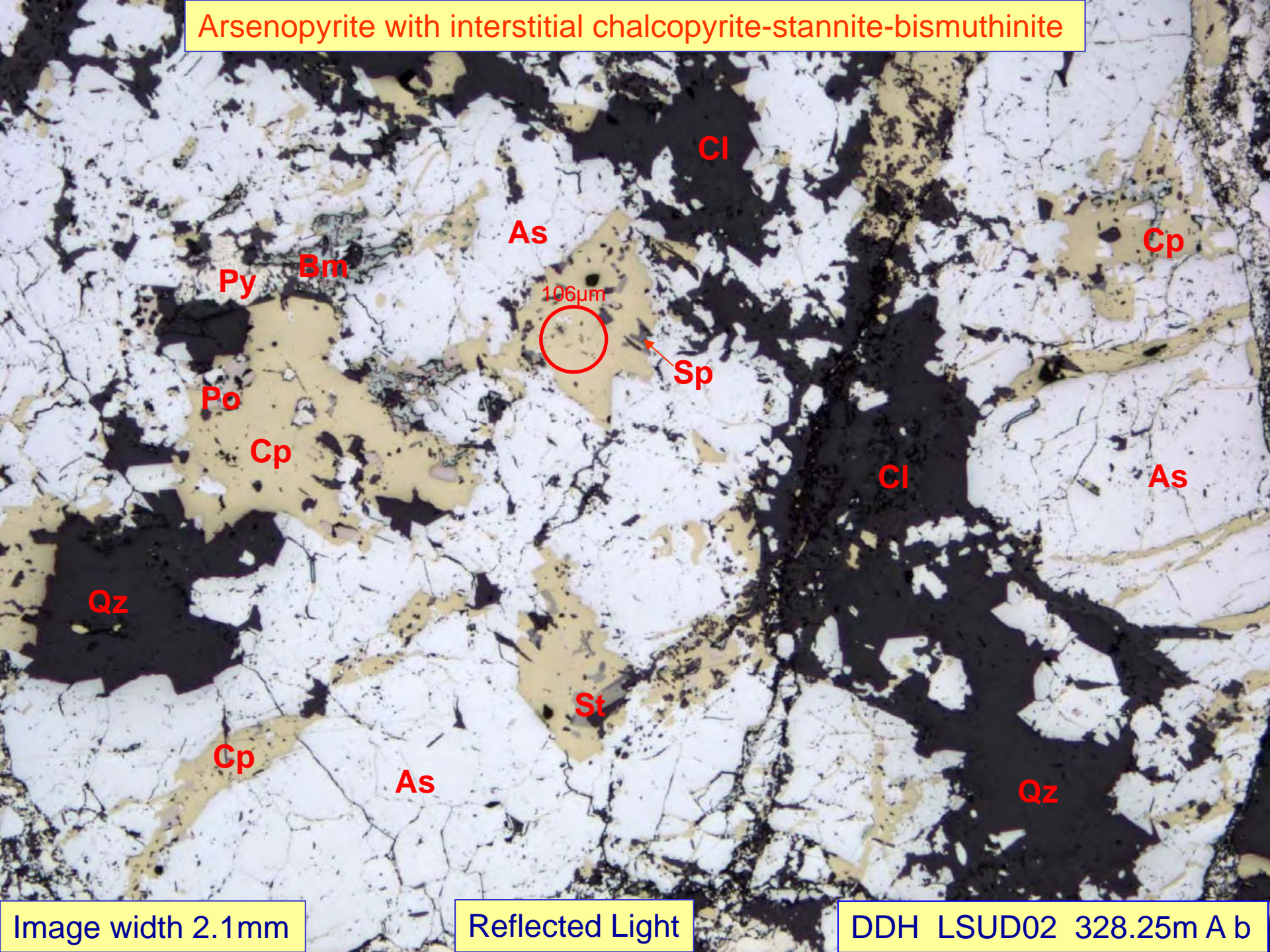


Image width 2.1mm

Reflected Light

DDH LSUD02 328.25m A b

Polyminerallic reworked occurrence – note rounding

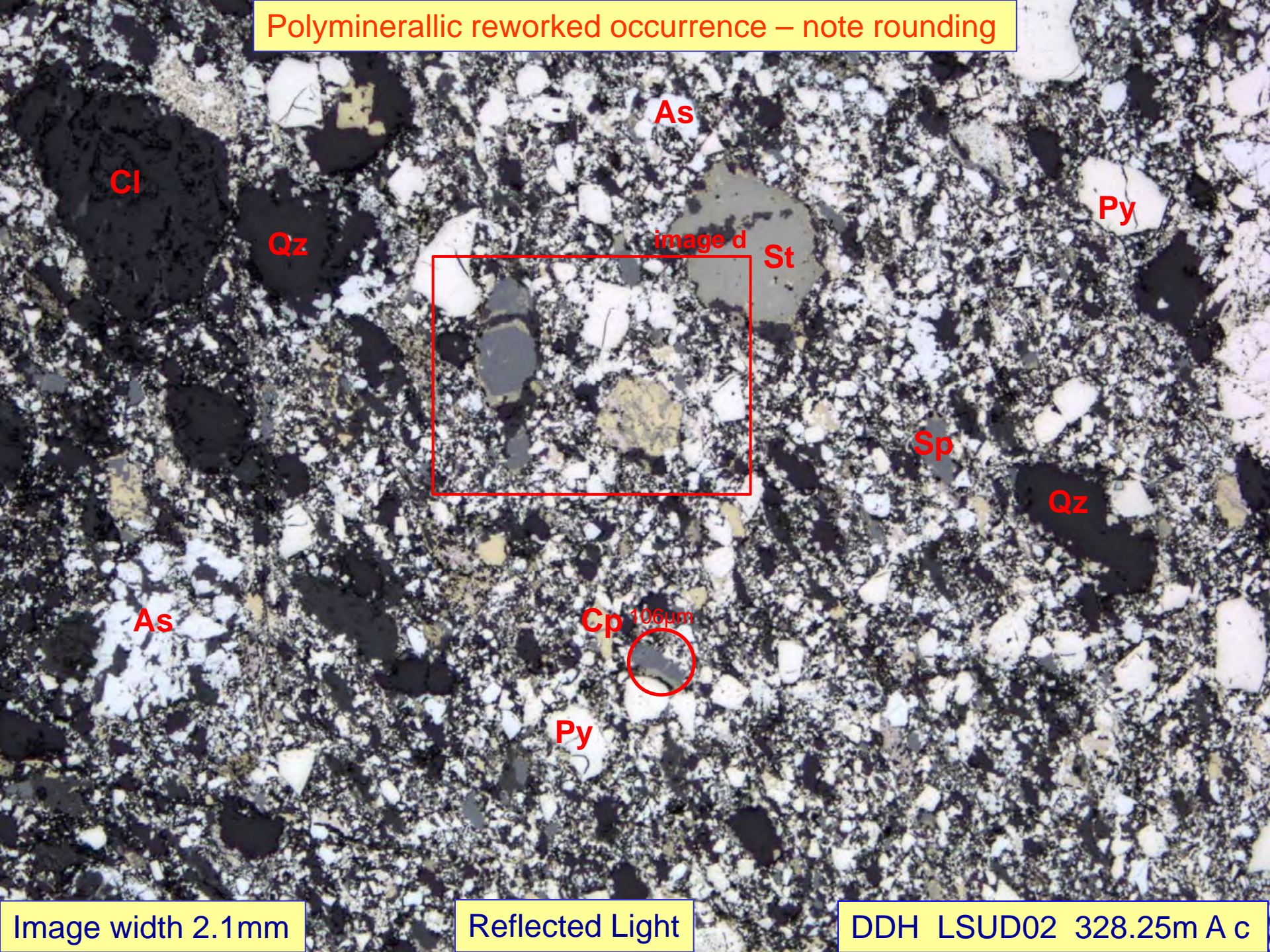


Image width 2.1mm

Reflected Light

DDH LSUD02 328.25m A c

Detail from previous image

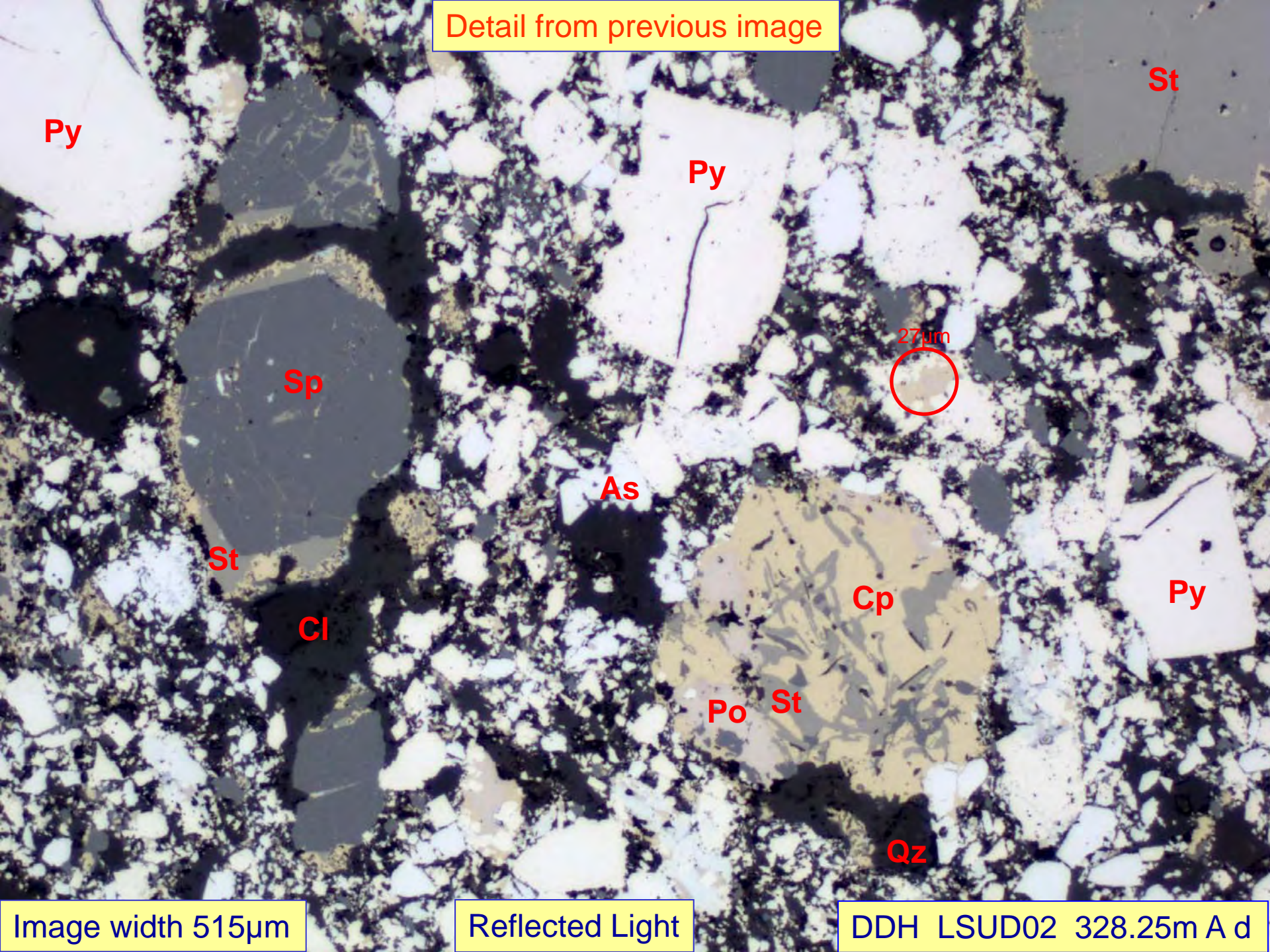
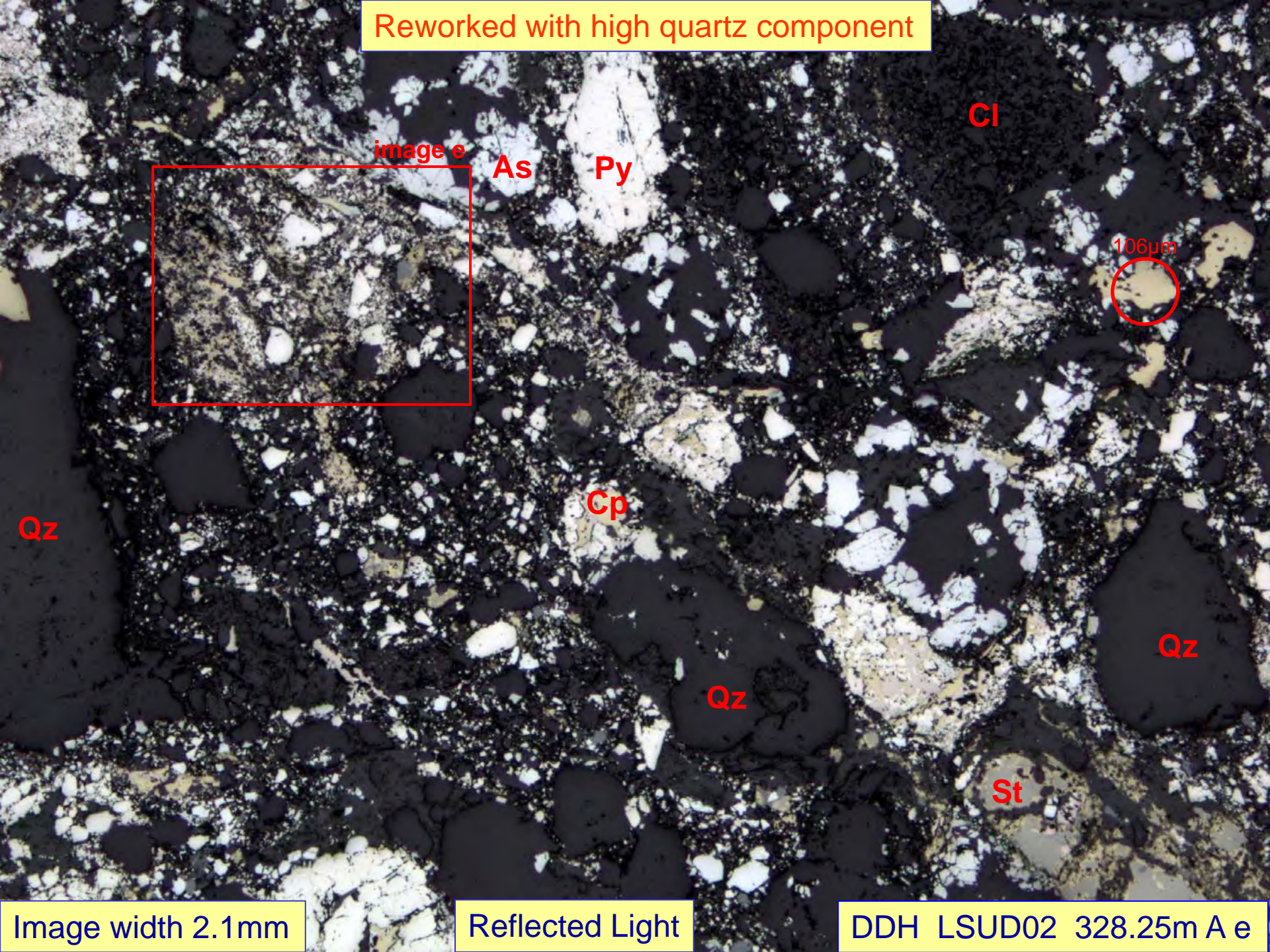


Image width 515µm

Reflected Light

DDH LSUD02 328.25m A d

Reworked with high quartz component



Qz

image e

As

Py

Cl

106µm

Cp

Qz

Qz

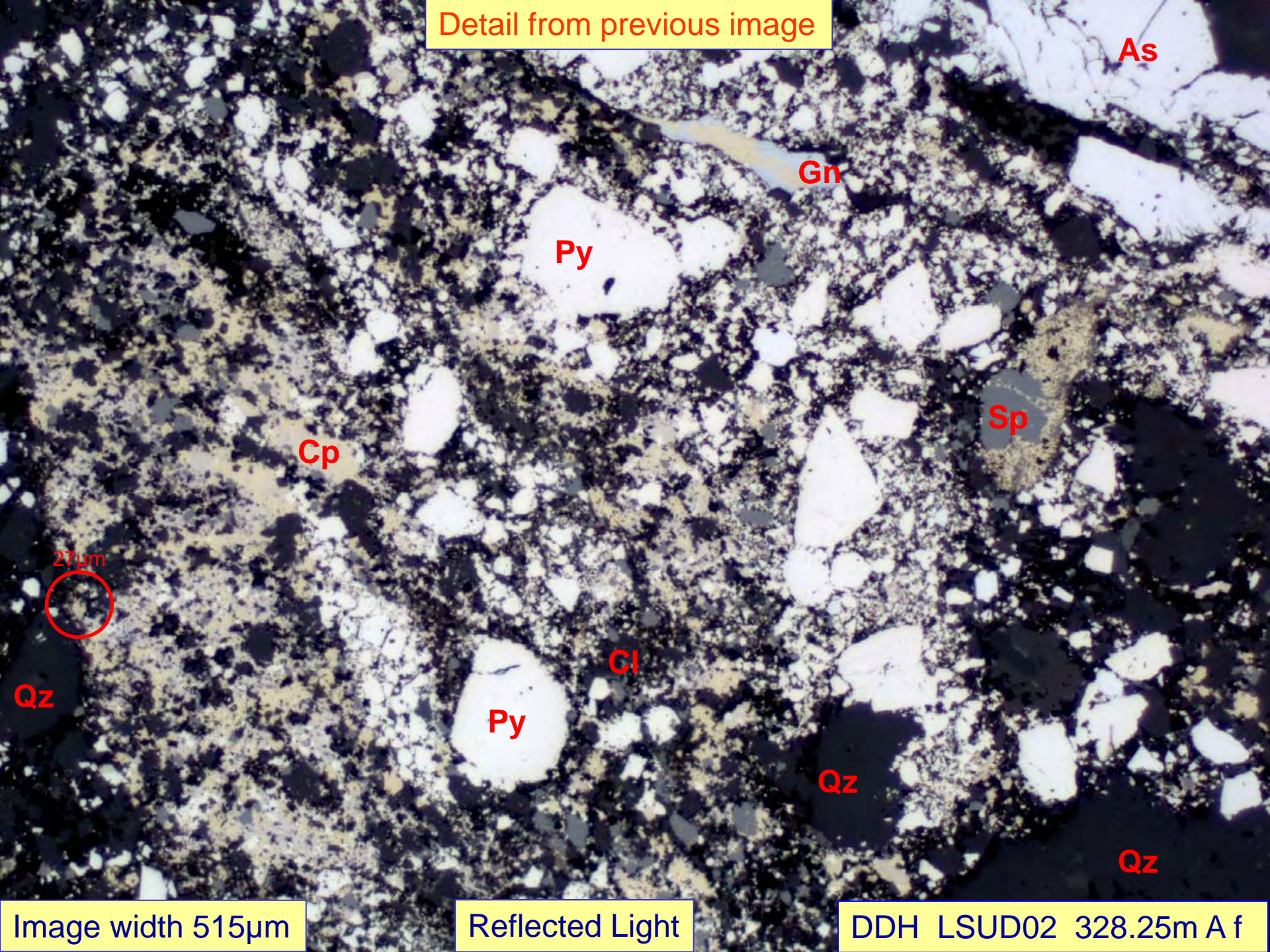
St

Image width 2.1mm

Reflected Light

DDH LSUD02 328.25m A e

Detail from previous image



As

Gn

Py

Cp

Sp

Cl

Py

Qz

Qz

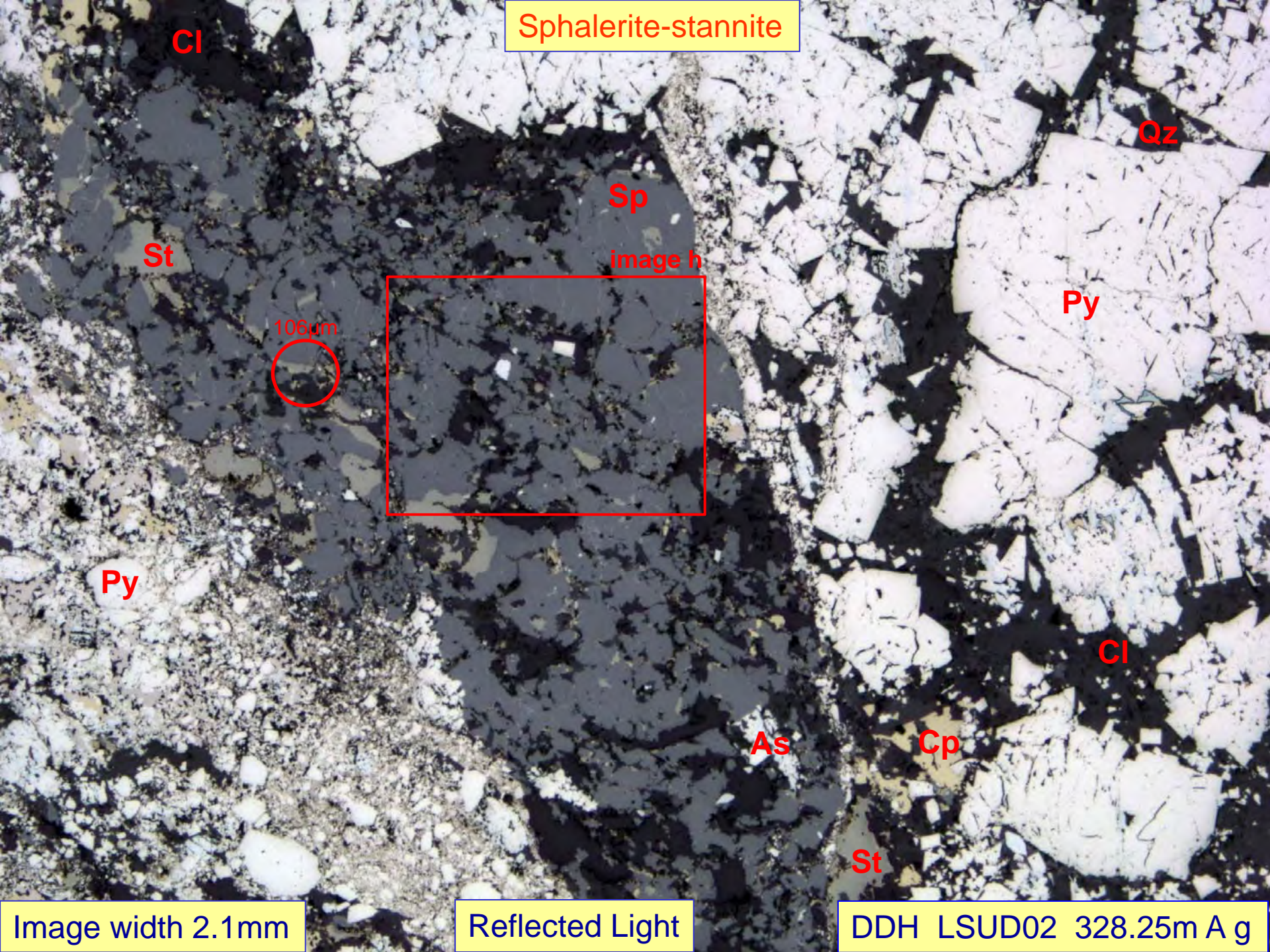
27µm

Qz

Image width 515µm

Reflected Light

DDH LSUD02 328.25m A f



Sphalerite-stannite

Cl

Qz

Sp

image h

St

Py

106µm

Py

Cl

As

Cp

St

Image width 2.1mm

Reflected Light

DDH LSUD02 328.25m A g

Detail from previous image

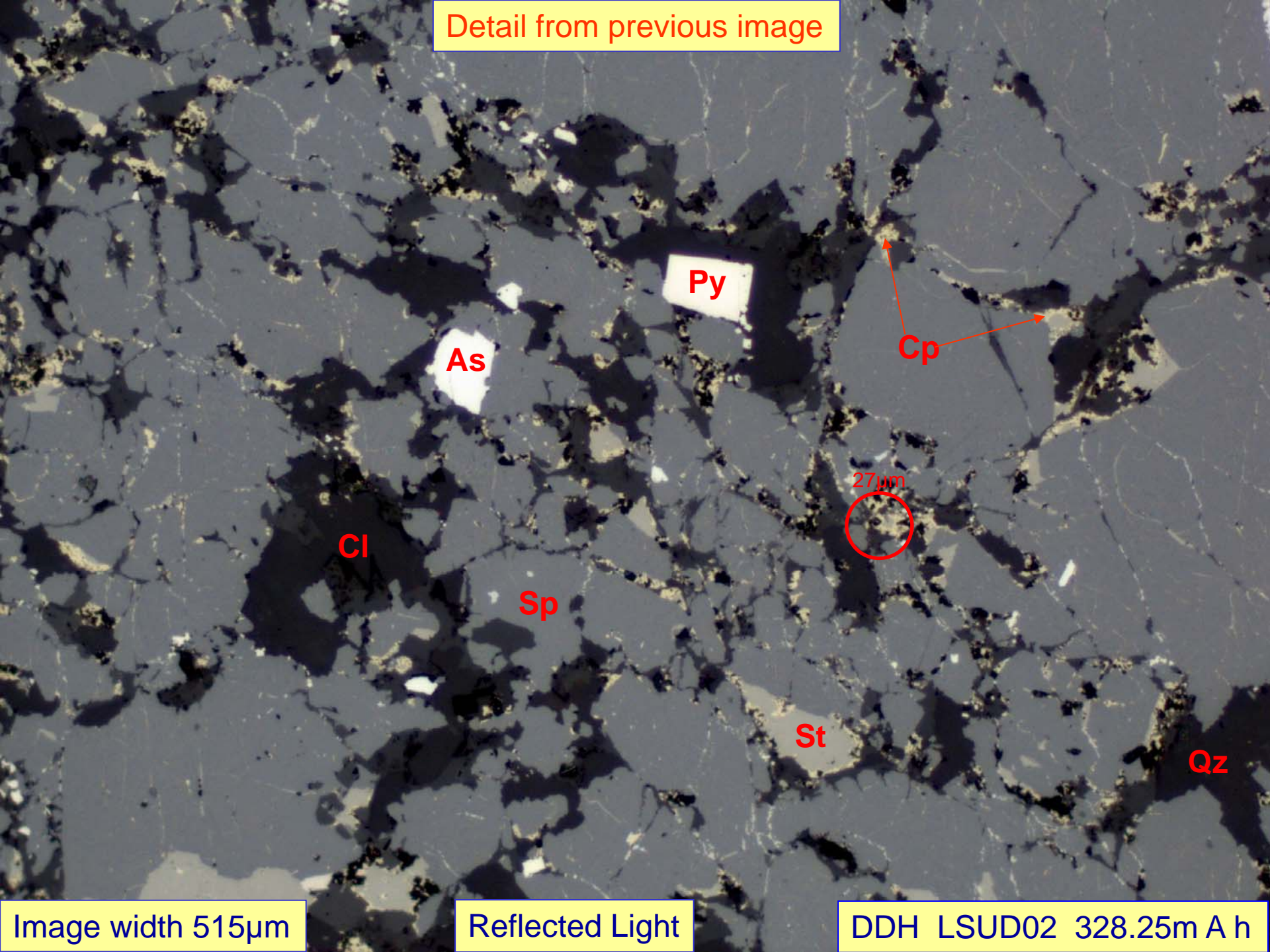
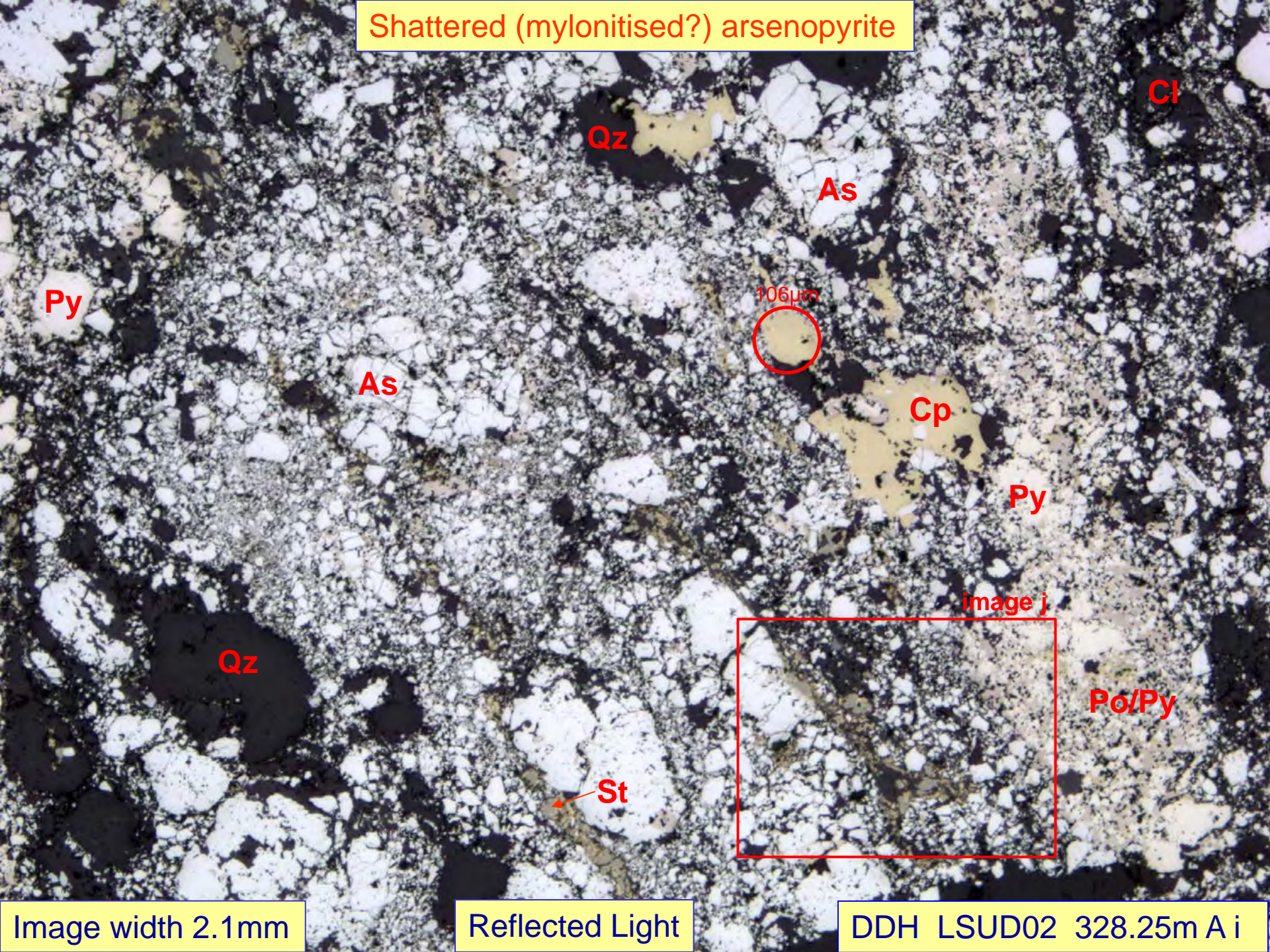


Image width 515µm

Reflected Light

DDH LSUD02 328.25m A h

Shattered (mylonitised?) arsenopyrite



Py

Qz

Cl

As

As

106µm

Cp

Py

Qz

image j

Po/Py

St

Image width 2.1mm

Reflected Light

DDH LSUD02 328.25m A i

Detail from previous image

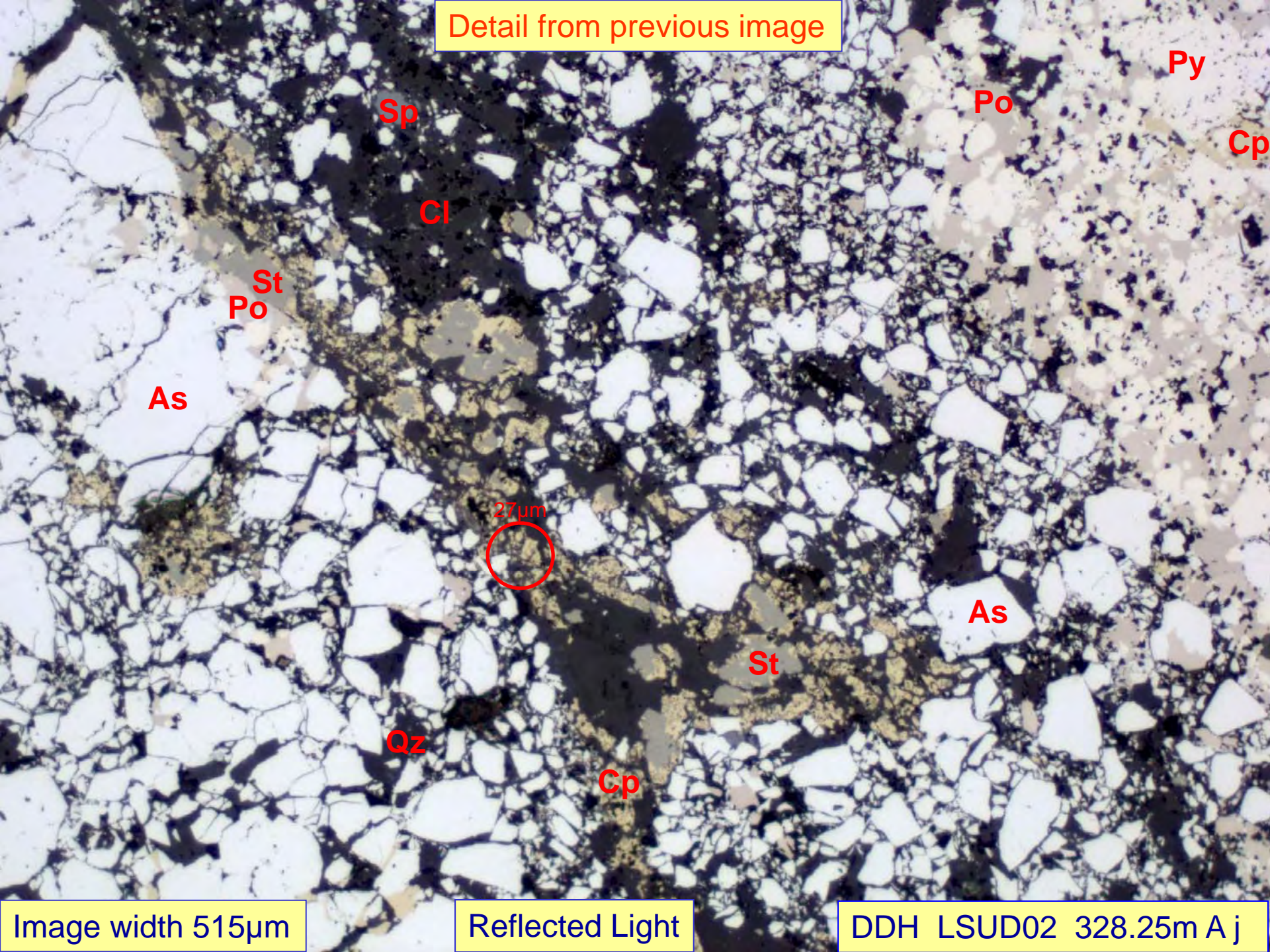


Image width 515µm

Reflected Light

DDH LSUD02 328.25m A j

Reworked pyrite healed by later pyrite

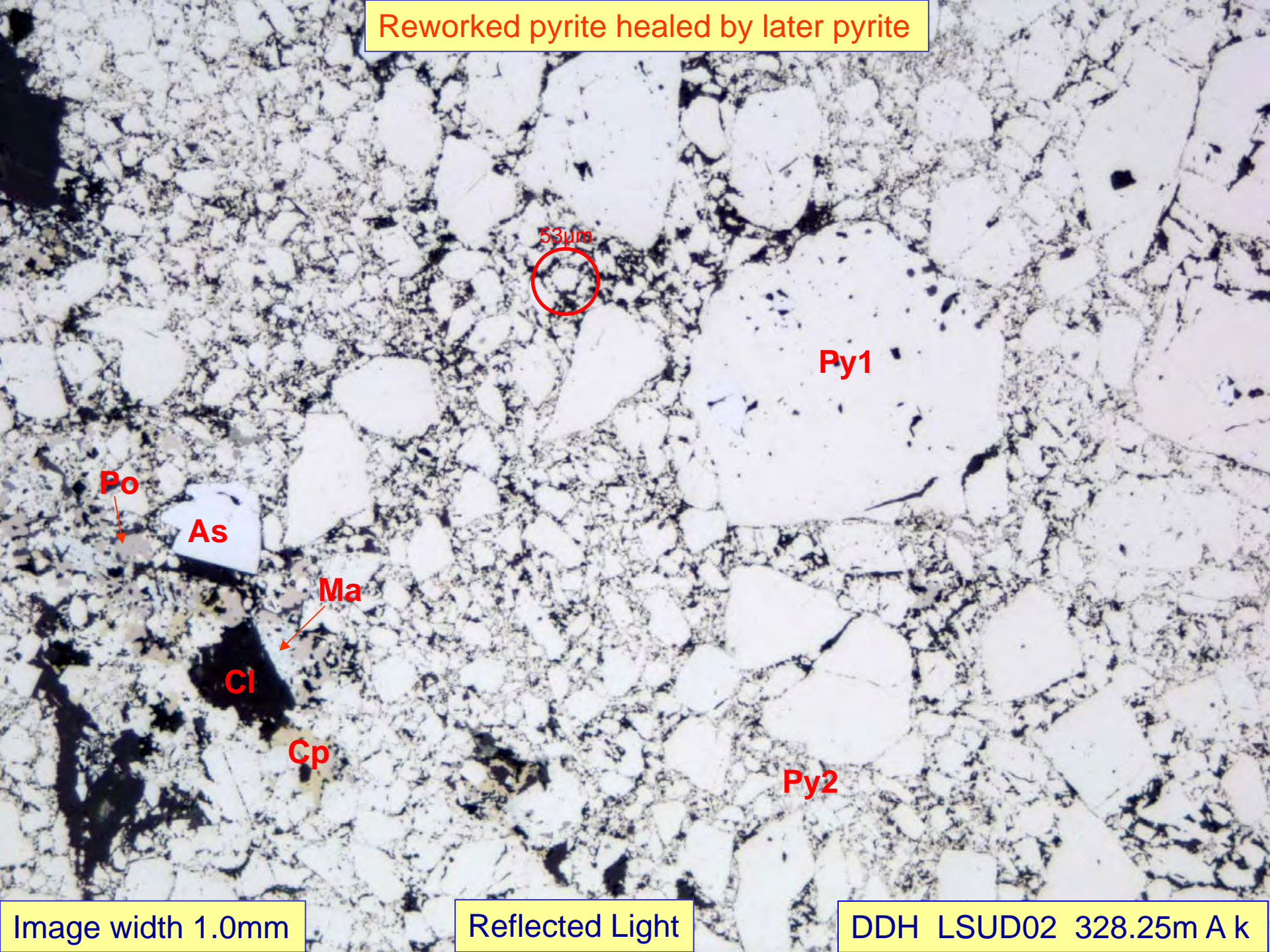


Image width 1.0mm

Reflected Light

DDH LSUD02 328.25m A k

Stannite-chalcopyrite interstitial to chlorite

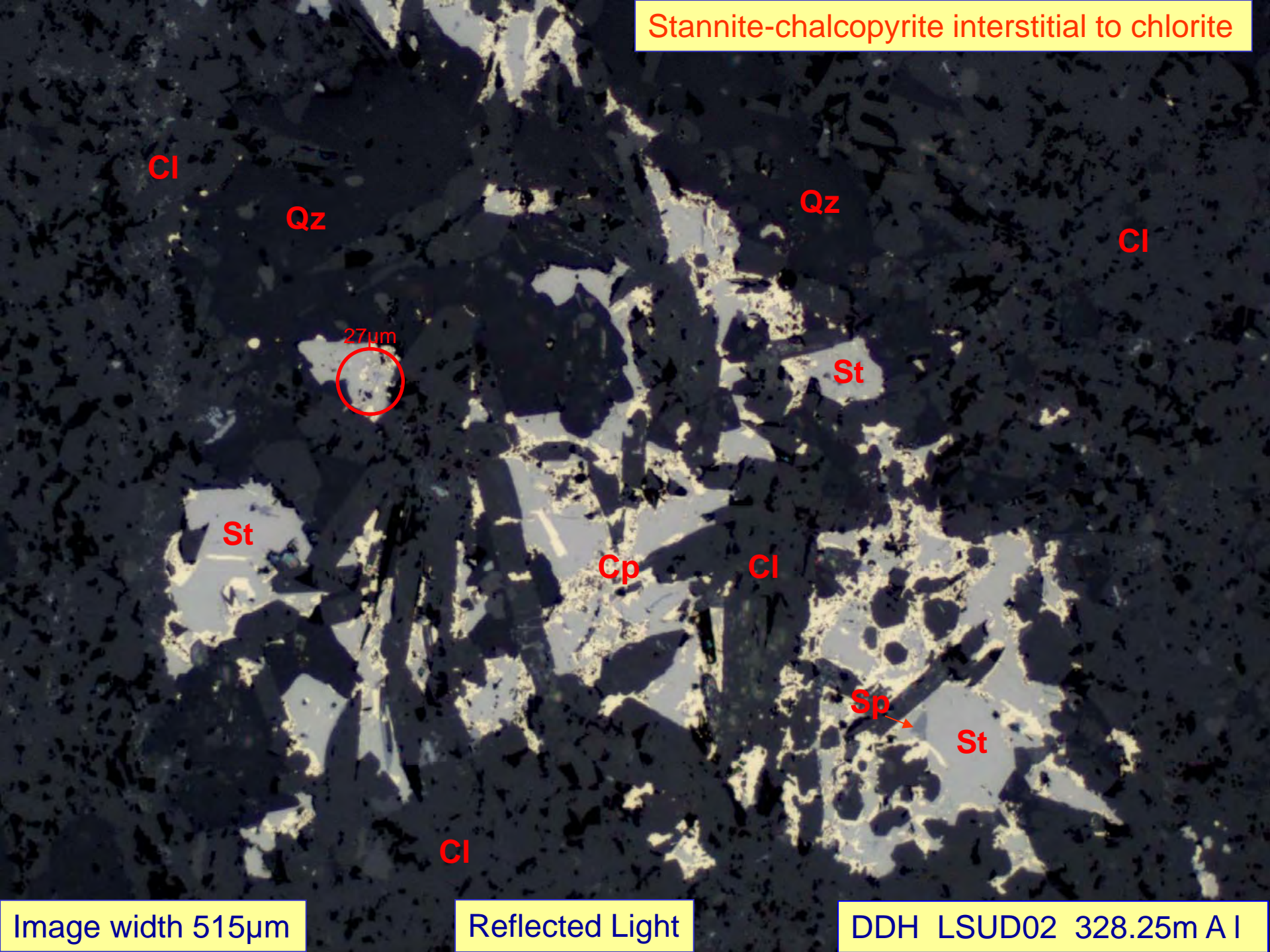
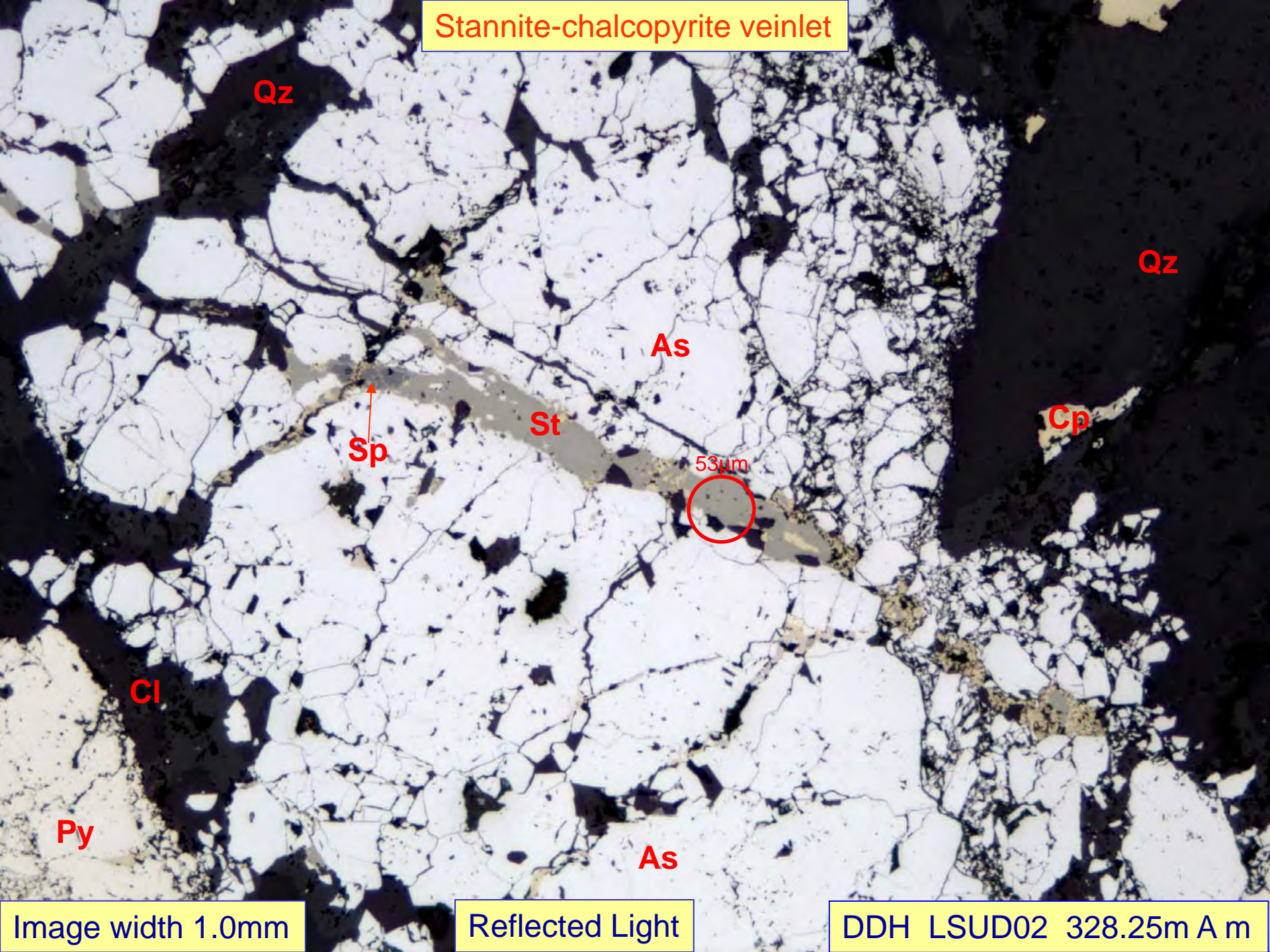


Image width 515µm

Reflected Light

DDH LSUD02 328.25m A I

Stannite-chalcopyrite veinlet



Qz

Qz

As

St

Cp

Sp

53µm

Cl

Py

As

Image width 1.0mm

Reflected Light

DDH LSUD02 328.25m A m

Shattering variations with microfaults

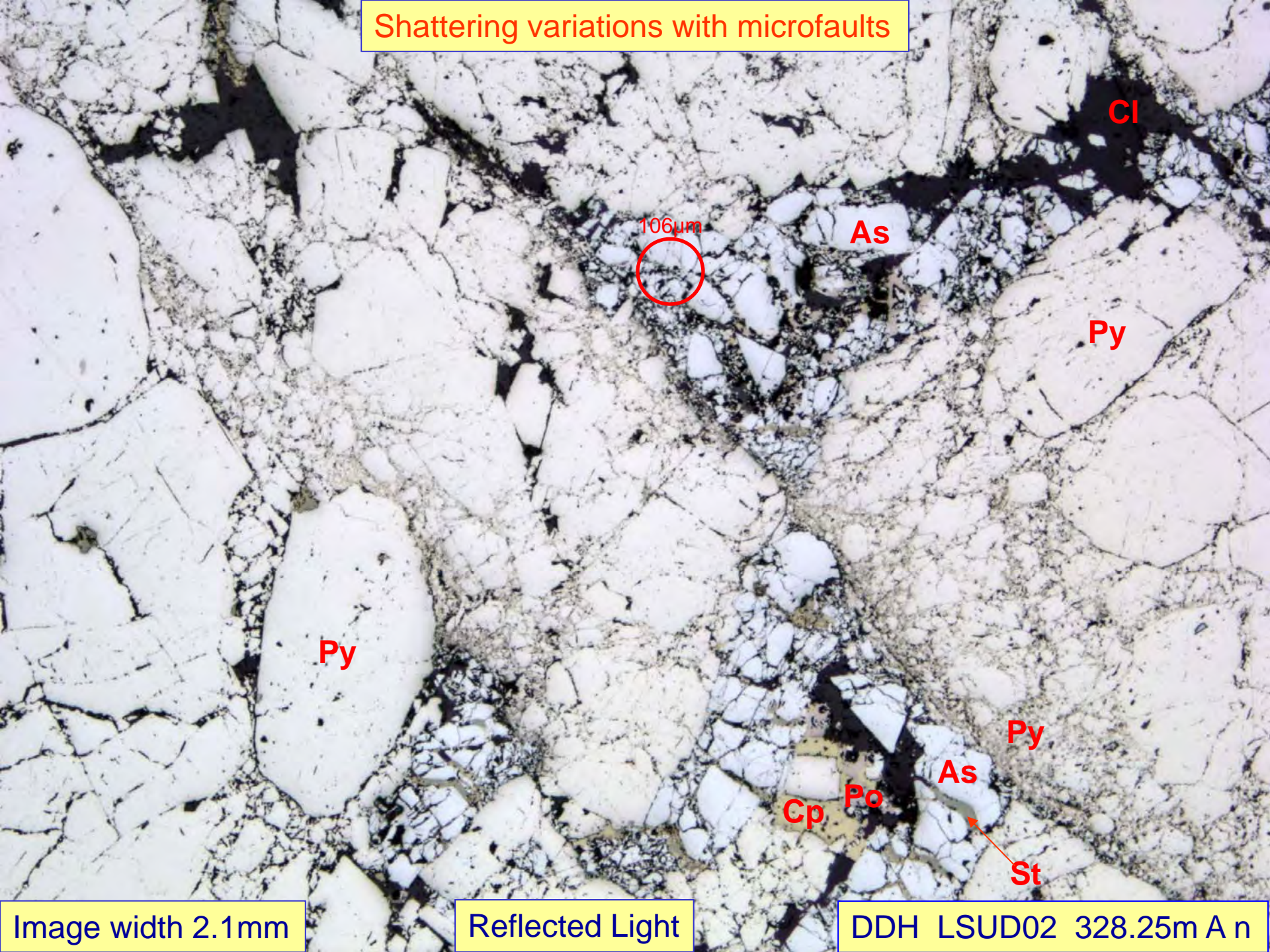


Image width 2.1mm

Reflected Light

DDH LSUD02 328.25m A n

Stannite-chalcopyrite-sphalerite

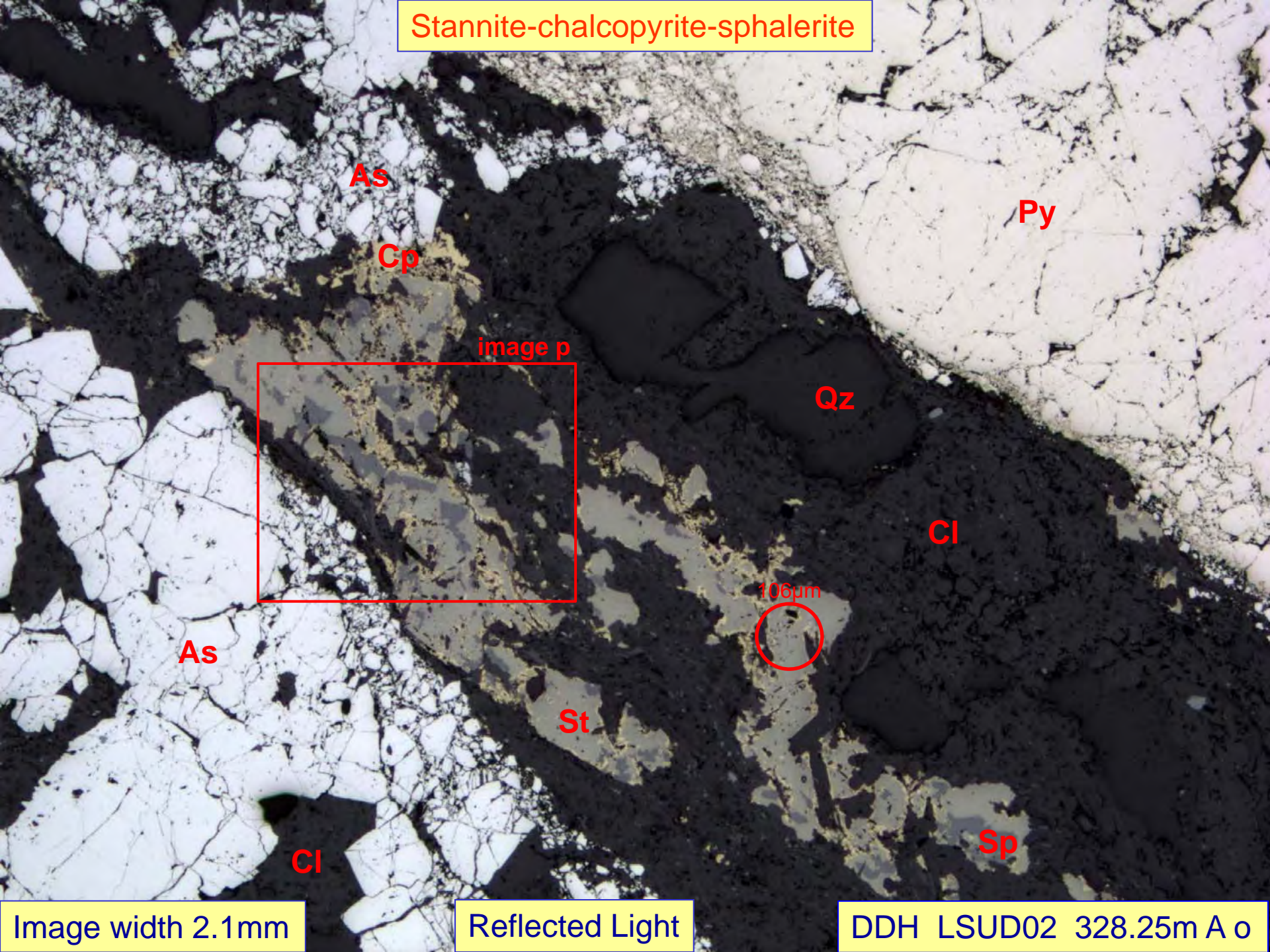


Image width 2.1mm

Reflected Light

DDH LSUD02 328.25m A o

Detail from previous image

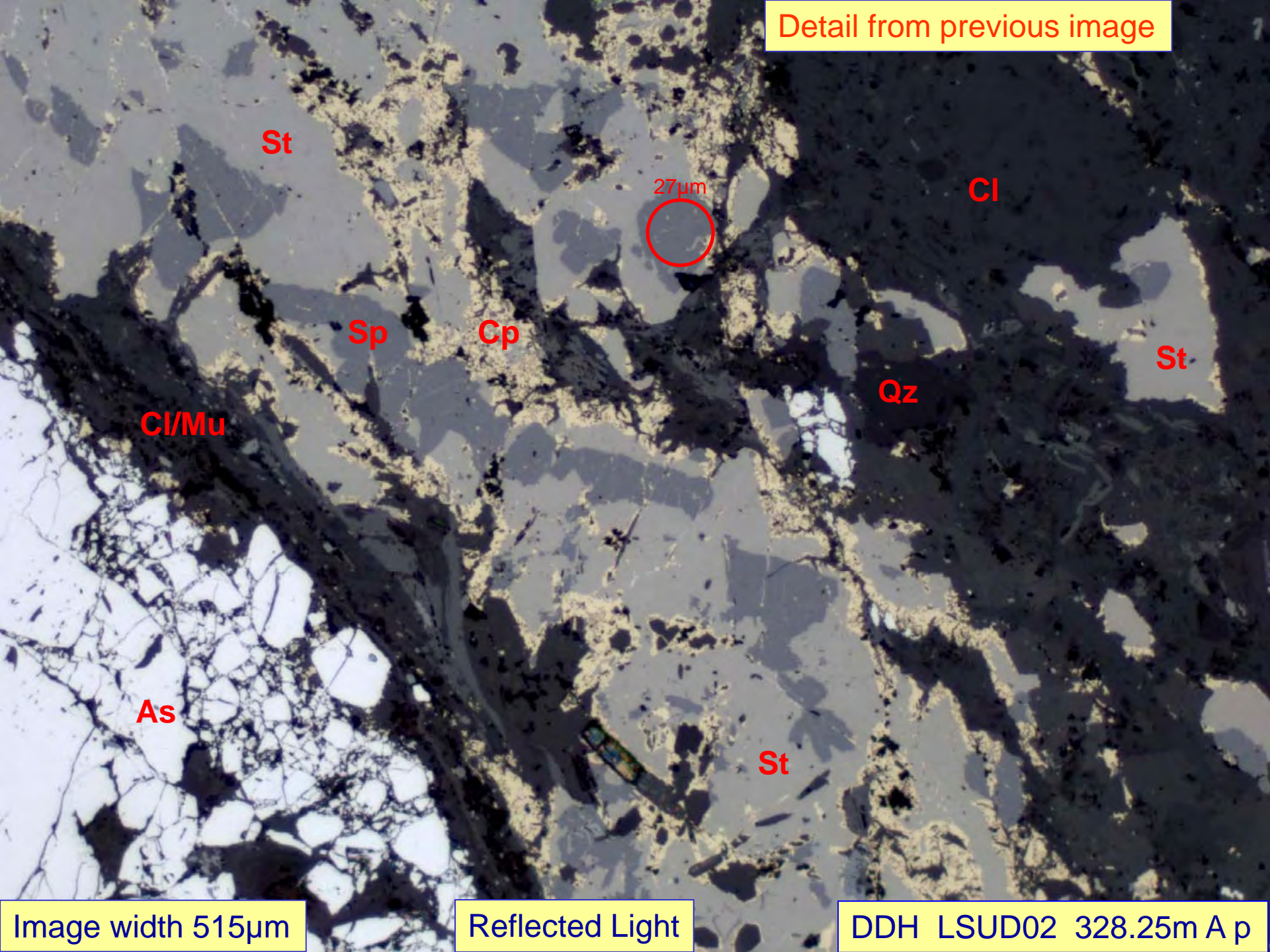
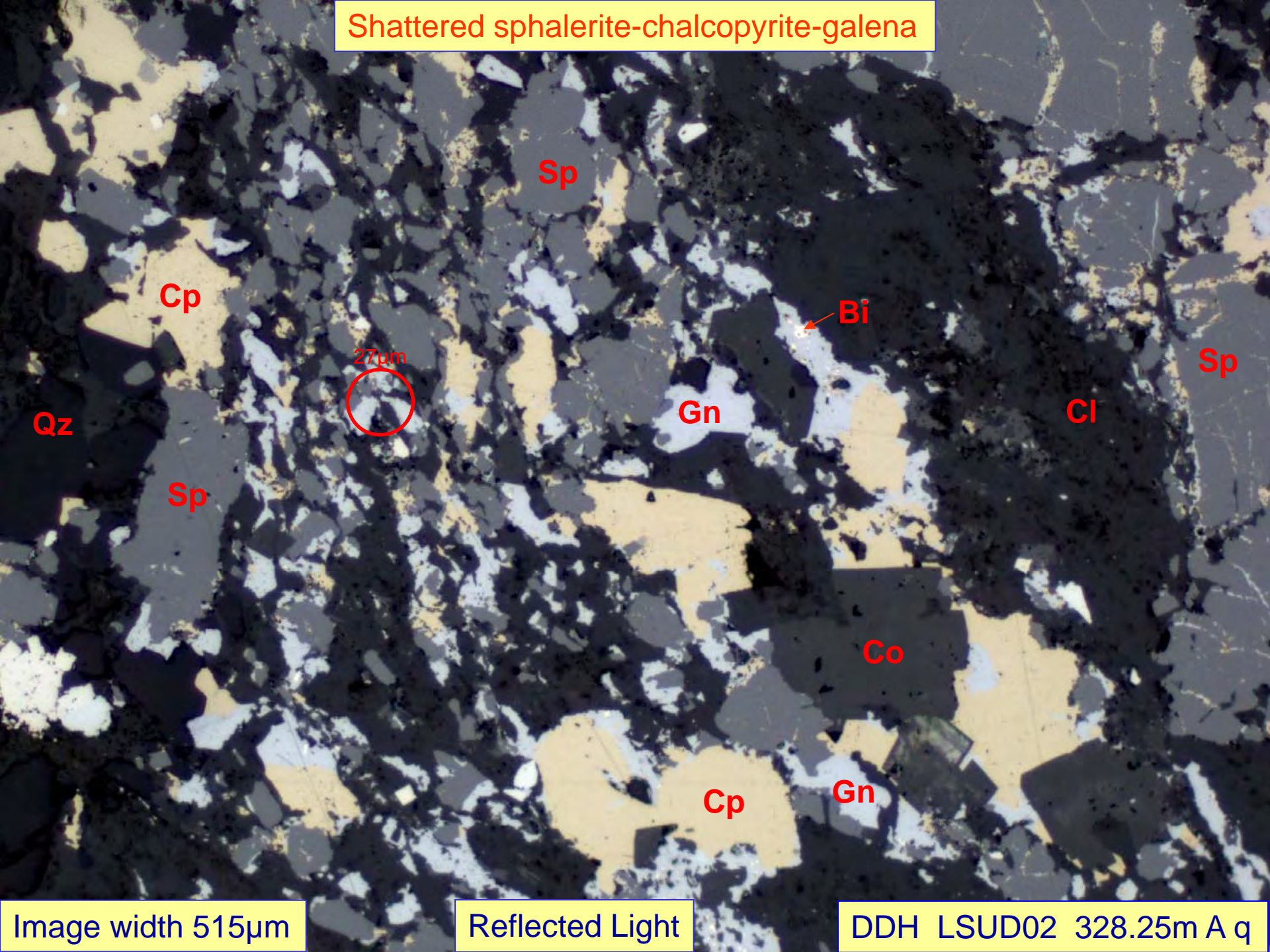


Image width 515µm

Reflected Light

DDH LSUD02 328.25m A p

Shattered sphalerite-chalcopyrite-galena



27µm

Image width 515µm

Reflected Light

DDH LSUD02 328.25m A q

Detail of stannite-chalcopyrite-sphalerite zonation

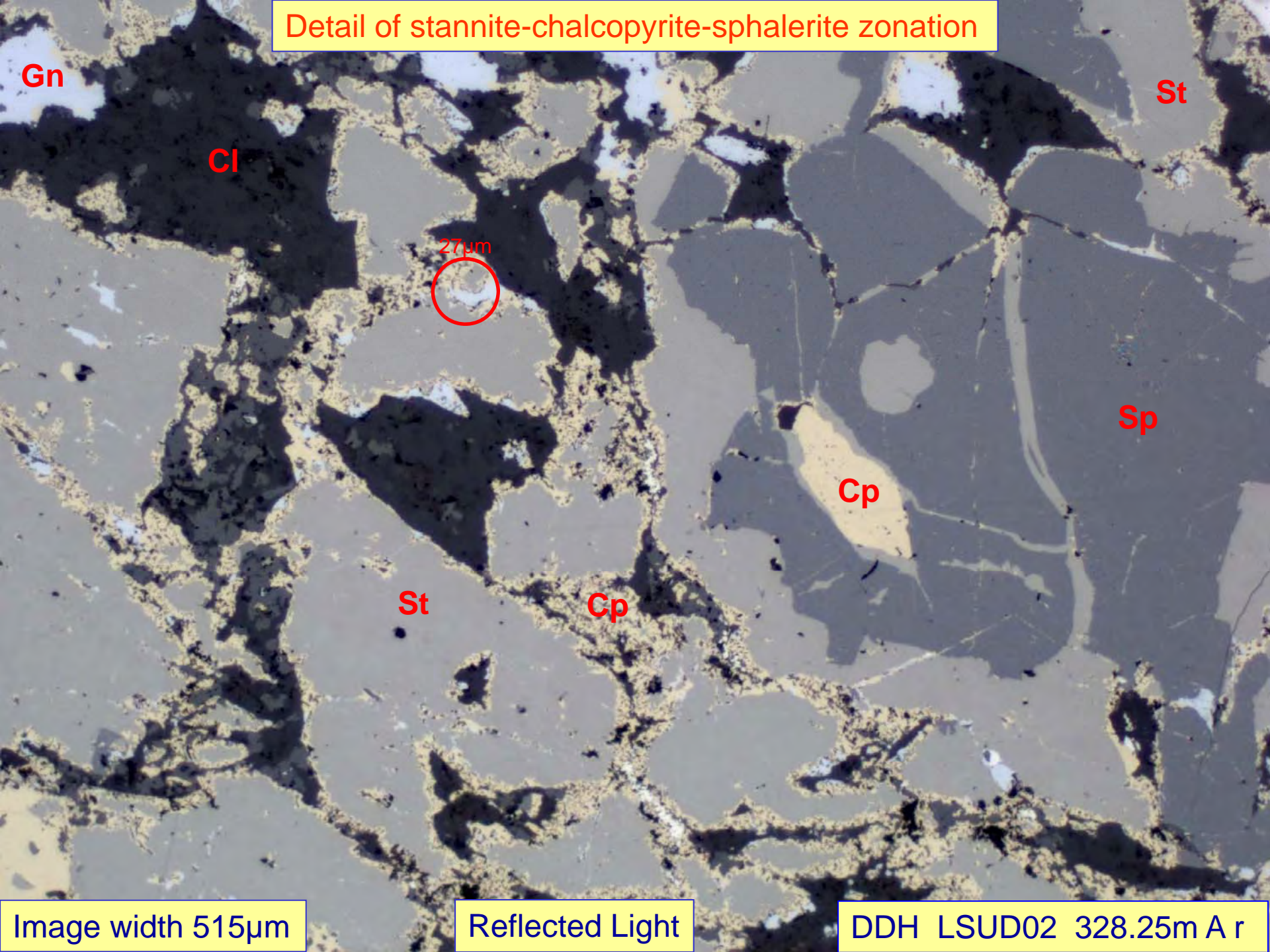


Image width 515µm

Reflected Light

DDH LSUD02 328.25m A r

Offcut Assay

0.75%Cu, 0.37%Pb, 0.35%Zn, 171ppmBi, 6.91%As, 0.84%Sn, 13.6%S, 3.04ppmAu



Unity Mining Ltd - Lakeside Drillcore Mineralogy

Sample DDH LSUD02 328.25m B

GJMcA 14.2.13

Total Scan Data - 530µm Mask

Average composition																			
	Cp	Sp	Gn	Cs	St	Bm	Bi	Py	Me	Ma	Po	As	Qz	Cl	Co	Mu	Ru	Cy	Other
Vol%	0.9	0.0	0.0	0.0	0.4	0.0	0.0	3.4	0.9	0.0	0.4	6.8	67.8	16.9	1.4	1.2	0.0	0.0	0.0
Wt%	1.2	0.1	0.0	0.0	0.6	0.0	0.0	5.7	1.5	0.0	0.6	13.7	59.2	14.9	1.4	1.1	0.0	0.0	0.0

ASSAYS										ppm
	SG	%Cu	%Pb	%Zn	%As	%Sn	%Bi	%Fe	Au	
Calcd	3.00	0.60	0.00	0.03	6.29	0.17	0.00	10.9		
Actual		0.75	0.37	0.35	6.91	0.84	0.02		3.04	

Mineral Abbreviations			
Cp	Chalcopyrite	Ma	Marcasite
Sp	Sphalerite	Po	Pyrrhotite
Gn	Galena	As	Arsenopyrite
Cs	Cassiterite	Qz	Quartz
St	Stannite	Cl	Chlorite
Bm	Bismuthinite	Co	Carbonate
Bi	Native Bismuth	Mu	Muscovite
Py	Pyrite	Ru	Rutile
Me	Melnikovite	Cy	Clay

Economic Mineral Scan Data - 53µm Mask

COMPOSITE PROPORTIONS							
	Cp	Sp	Gn	Cs	St	Bm	Bi
Mono	0	0	0	0	0	0	0
Binary	27	0	0	0	0	0	0
Ternary	27	5	48	0	55	0	0
Quat.y+	45	95	52	0	45	0	0

BINARY ASSOCIATION MATRIX													
	Cp	Sp	Gn	Cs	St	Bm	Bi	Py	Me	Ma	Po	As	Ga
Cp		0	0	0	0	0	0	0	0	0	0	0	27
Sp	0		0	0	0	0	0	0	0	0	0	0	0
Gn	0	0		0	0	0	0	0	0	0	0	0	0
Cs	0	0	0		0	0	0	0	0	0	0	0	0
St	0	0	0	0		0	0	0	0	0	0	0	0
Bm	0	0	0	0	0		0	0	0	0	0	0	0
Bi	0	0	0	0	0	0		0	0	0	0	0	0

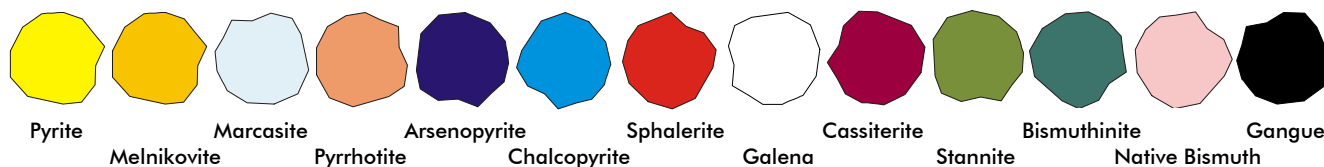
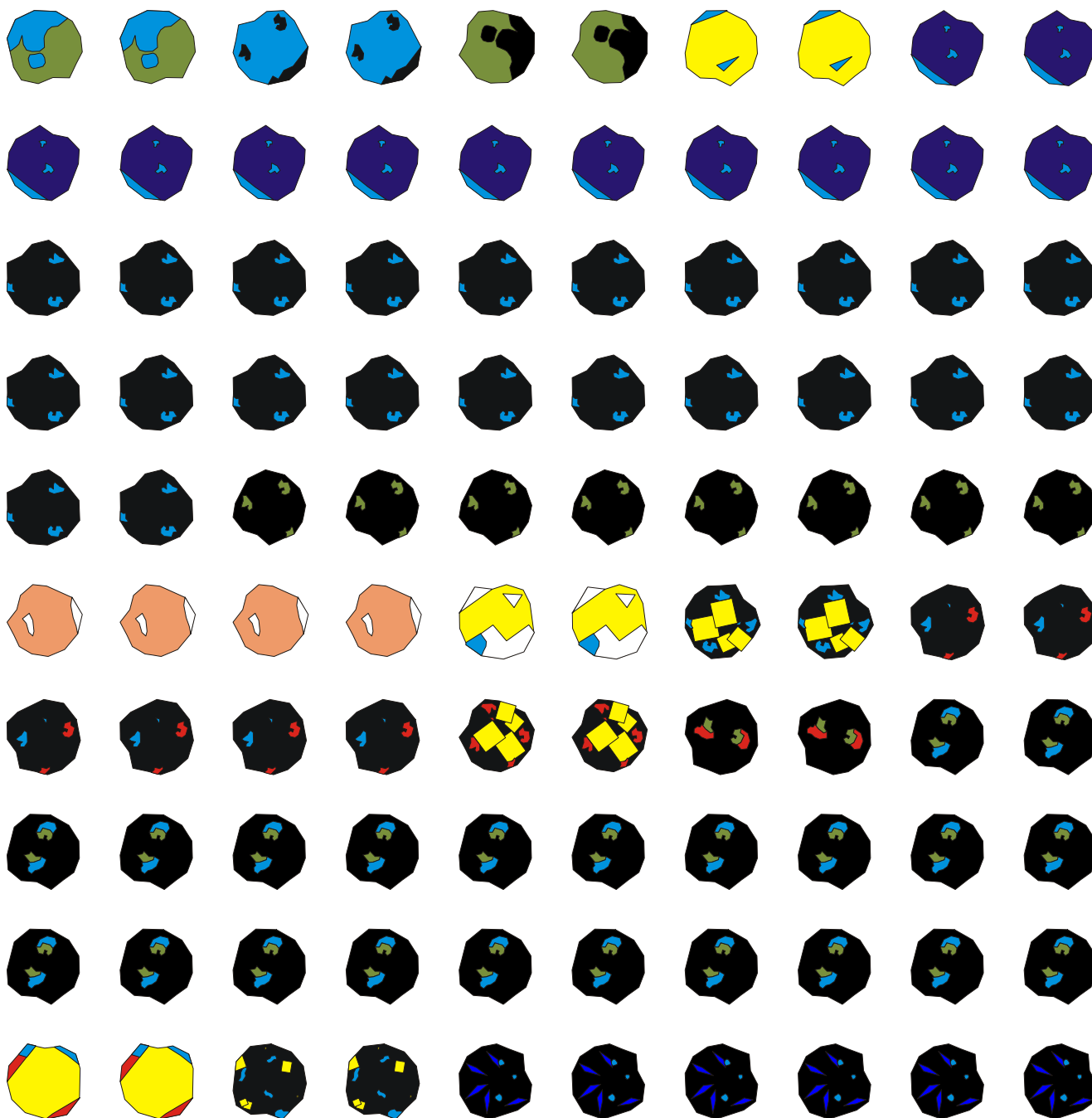
TOTAL ASSOCIATION MATRIX													
	Cp	Sp	Gn	Cs	St	Bm	Bi	Py	Me	Ma	Po	As	Ga
Cp		19	3	0	44	0	0	5	0	2	3	22	98
Sp	90		0	0	40	0	0	7	0	12	7	42	100
Gn	45	0		0	0	0	0	90	0	0	55	3	58
Cs	0	0	0		0	0	0	0	0	0	0	0	0
St	83	30	0	0		0	0	0	0	8	1	24	100
Bm	0	0	0	0	0		0	0	0	0	0	0	0
Bi	0	0	0	0	0	0		0	0	0	0	0	0

Unity Mining - Lakeside Drillcore Mineralogy

DDH LSUD02 328.25m
B Cu-Sn-Bi-Zn-Pb SCAN

53µm Mask

February 2013



General low-magnification view

Cl

As

Po

Qz

500µm

image b

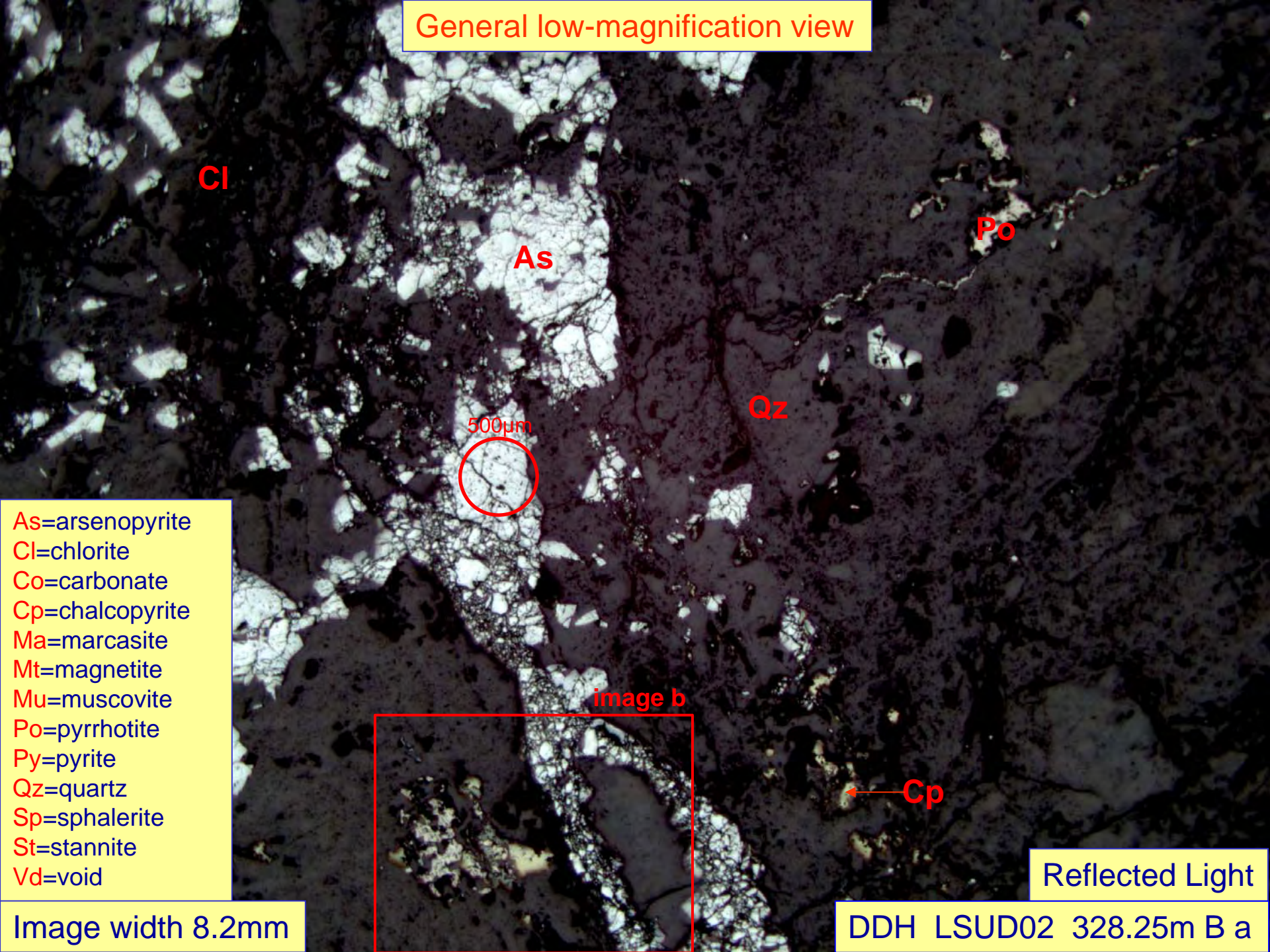
Cp

Reflected Light

As=arsenopyrite
Cl=chlorite
Co=carbonate
Cp=chalcopyrite
Ma=marcasite
Mt=magnetite
Mu=muscovite
Po=pyrrhotite
Py=pyrite
Qz=quartz
Sp=sphalerite
St=stannite
Vd=void

Image width 8.2mm

DDH LSUD02 328.25m B a



Irregular pyrrhotite-chalcopyrite-stannite segregation

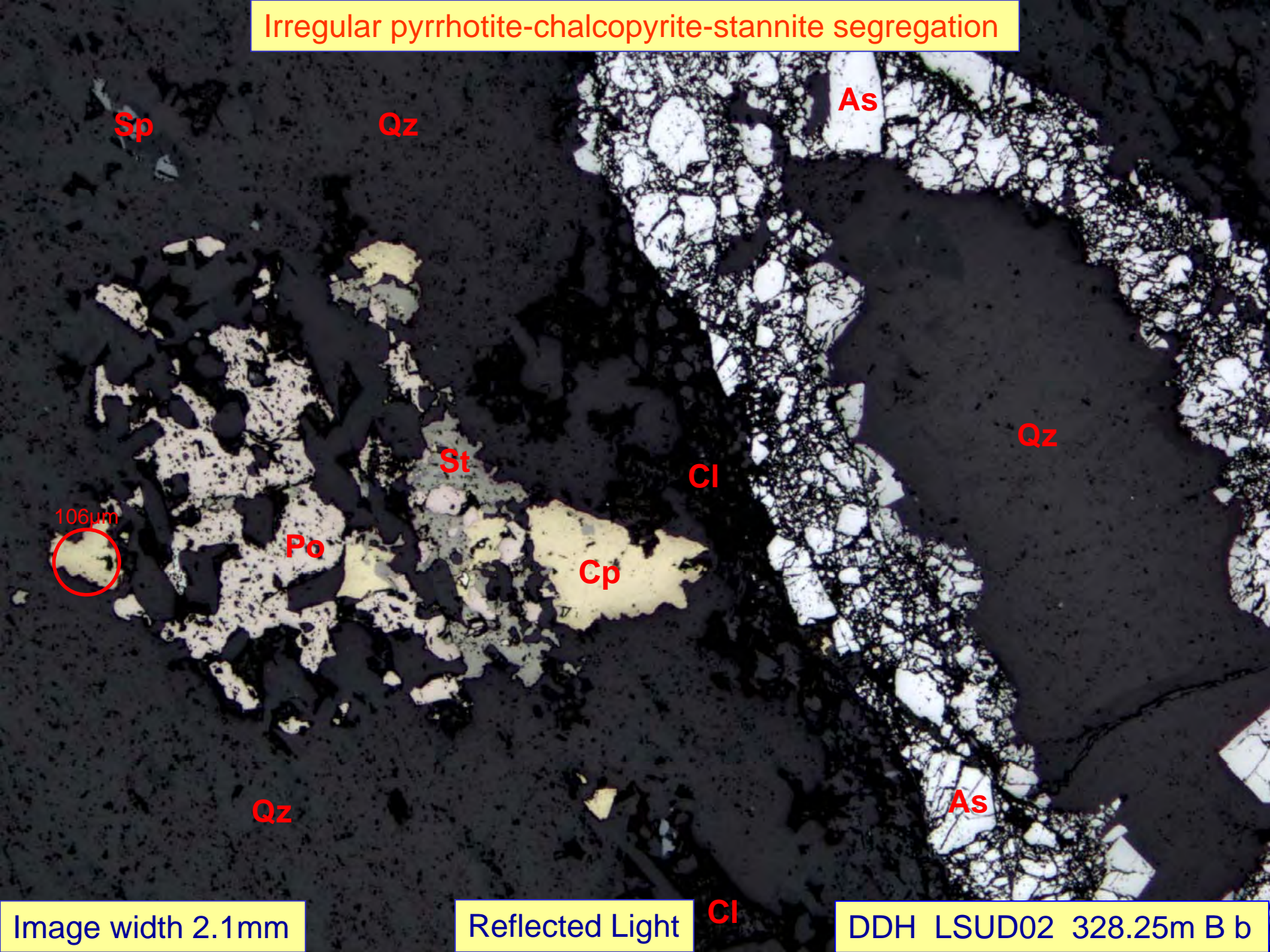


Image width 2.1mm

Reflected Light

Cl

DDH LSUD02 328.25m B b

Highly irregular pyrrhotite-stannite-chalcopyrite; late carbonate-pyrite

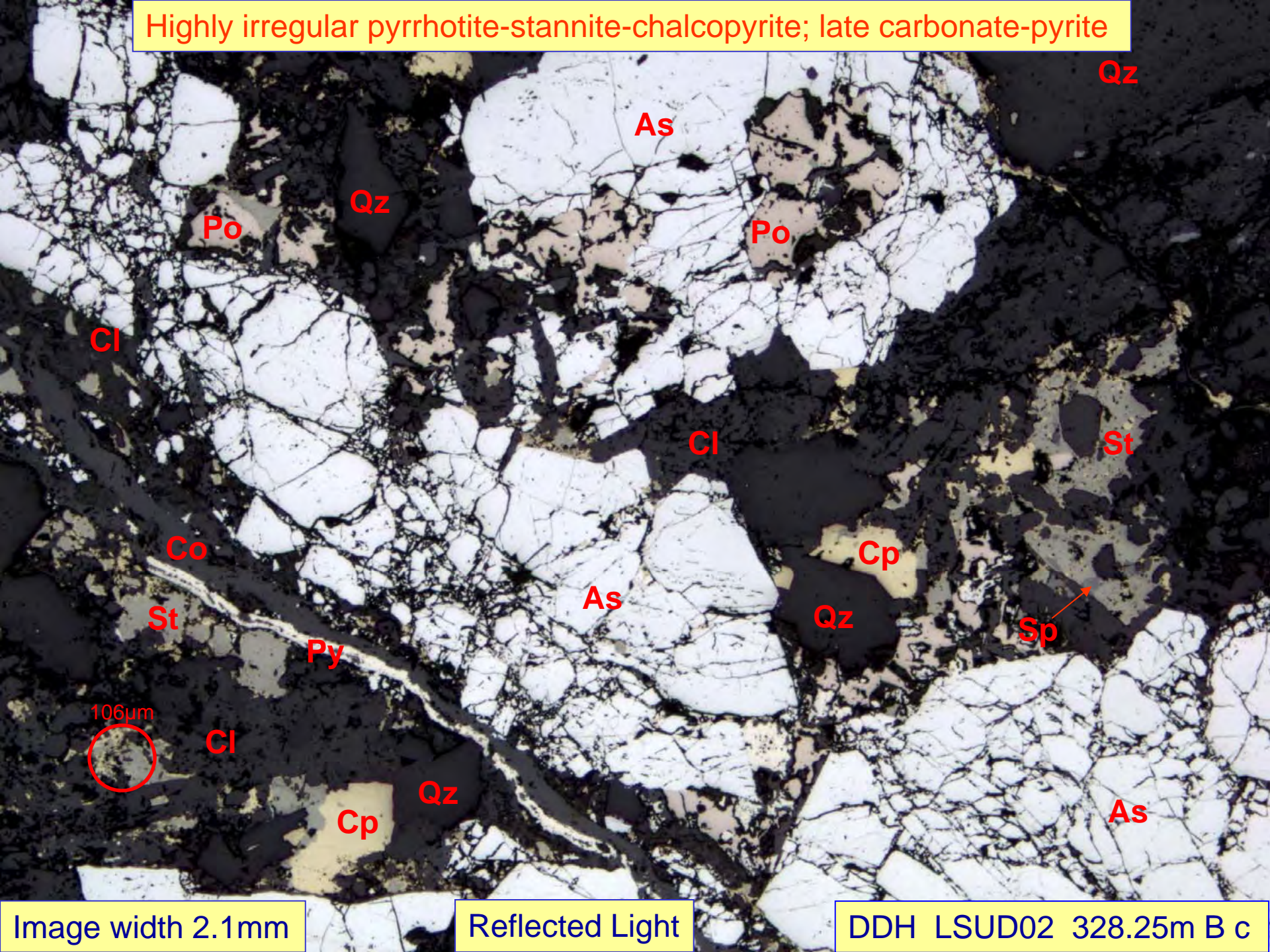
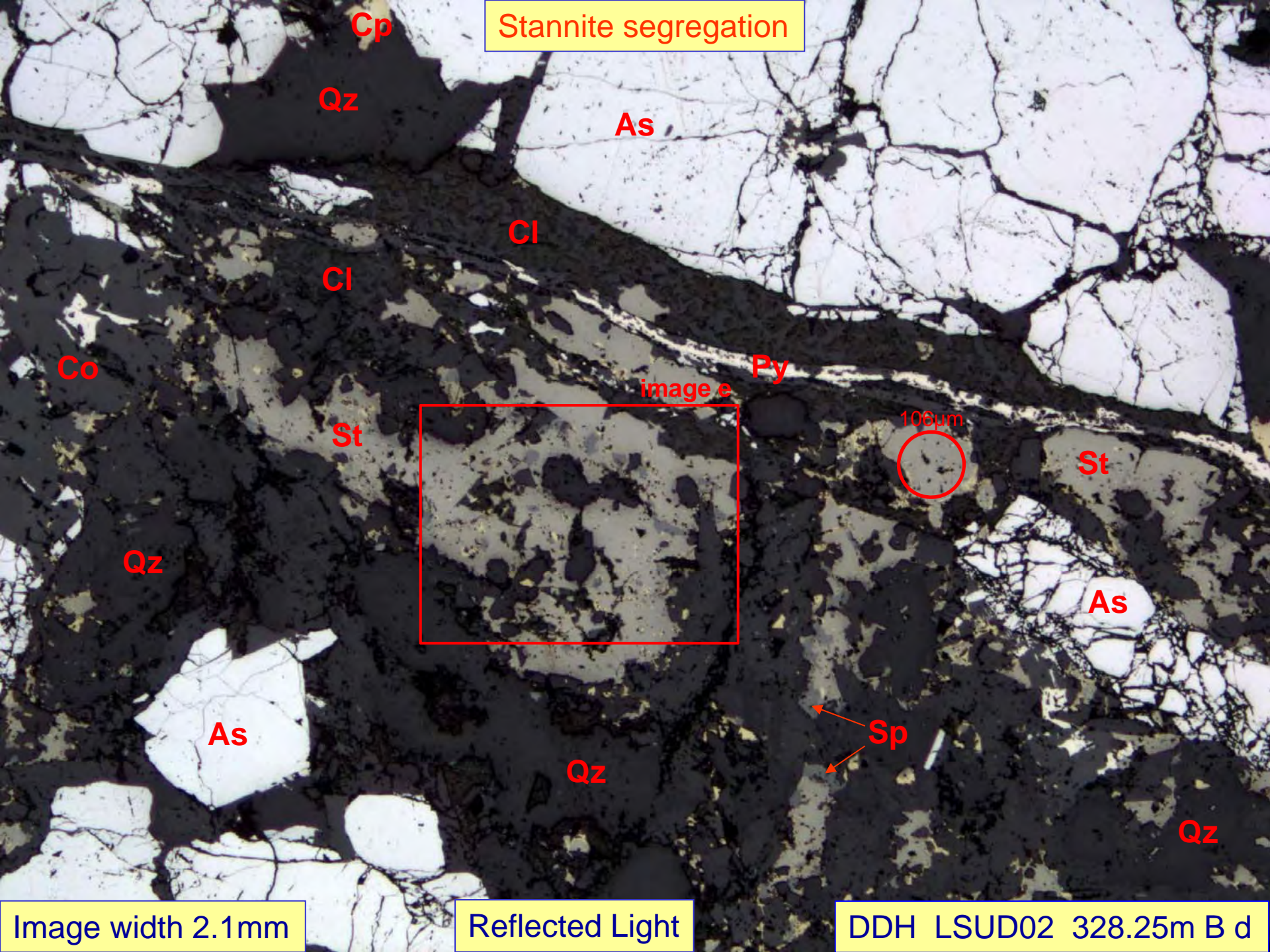


Image width 2.1mm

Reflected Light

DDH LSUD02 328.25m B c



Stannite segregation

Cp

Qz

As

Cl

Cl

Co

Py

image e

St

100µm

St

Qz

As

As

Qz

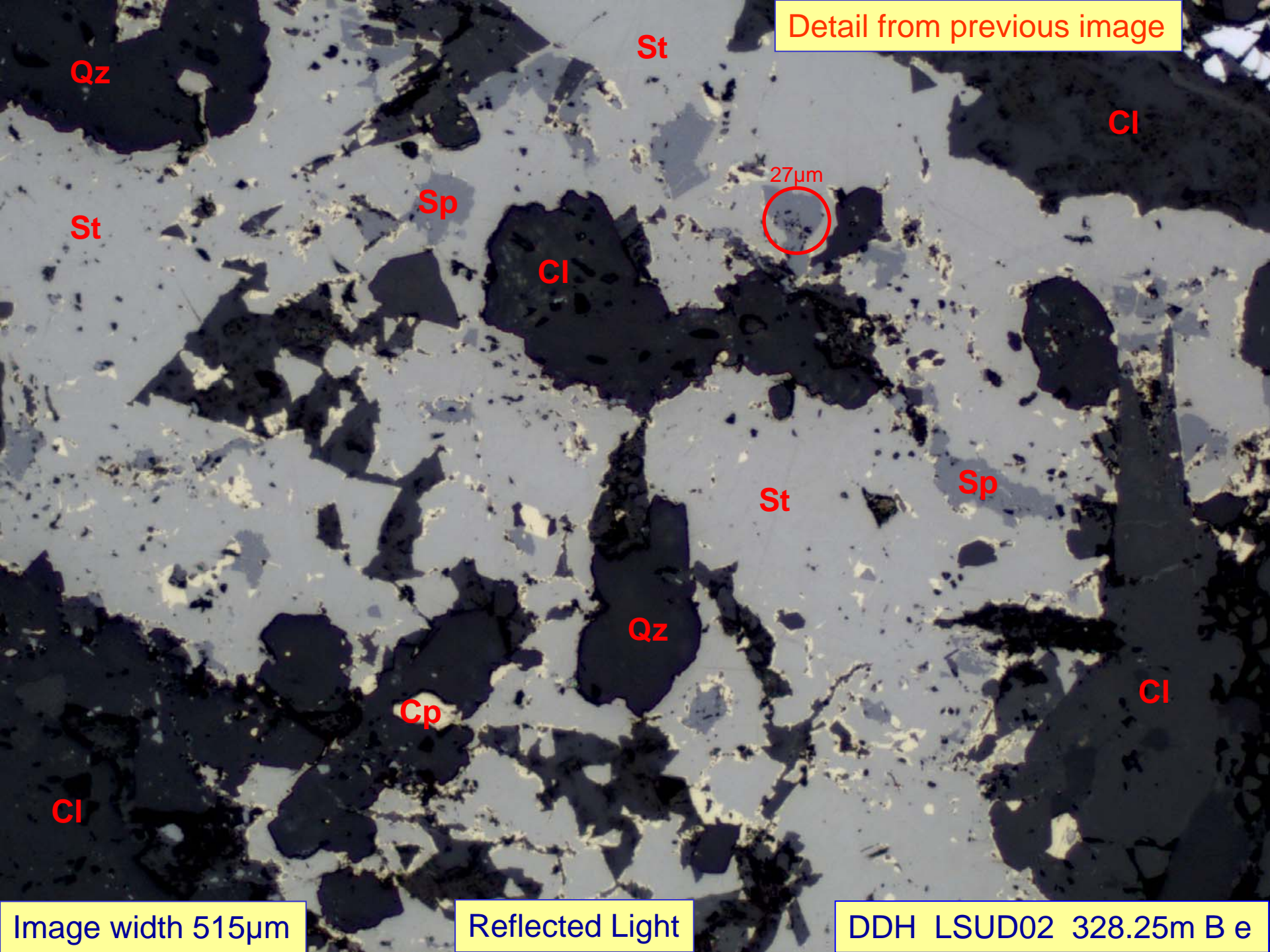
Sp

Qz

Image width 2.1mm

Reflected Light

DDH LSUD02 328.25m B d



Detail from previous image

Qz

St

Cl

St

Sp

27µm

Cl

St

Sp

Qz

Cp

Cl

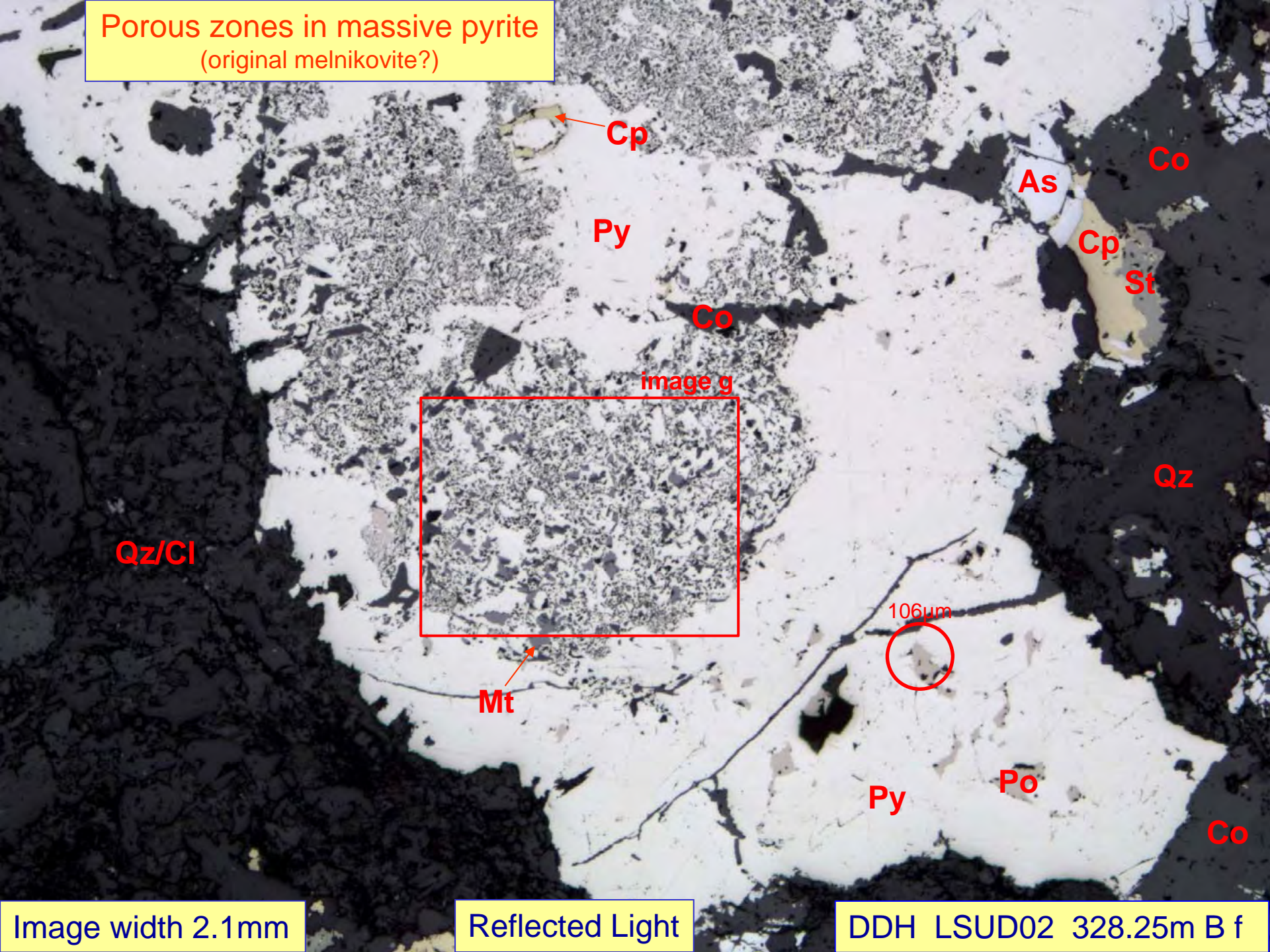
Cl

Image width 515µm

Reflected Light

DDH LSUD02 328.25m B e

Porous zones in massive pyrite
(original melnikovite?)



Qz/Cl

Cp

Py

Co

As

Co

Cp

St

image g

Qz

106µm

Mt

Py

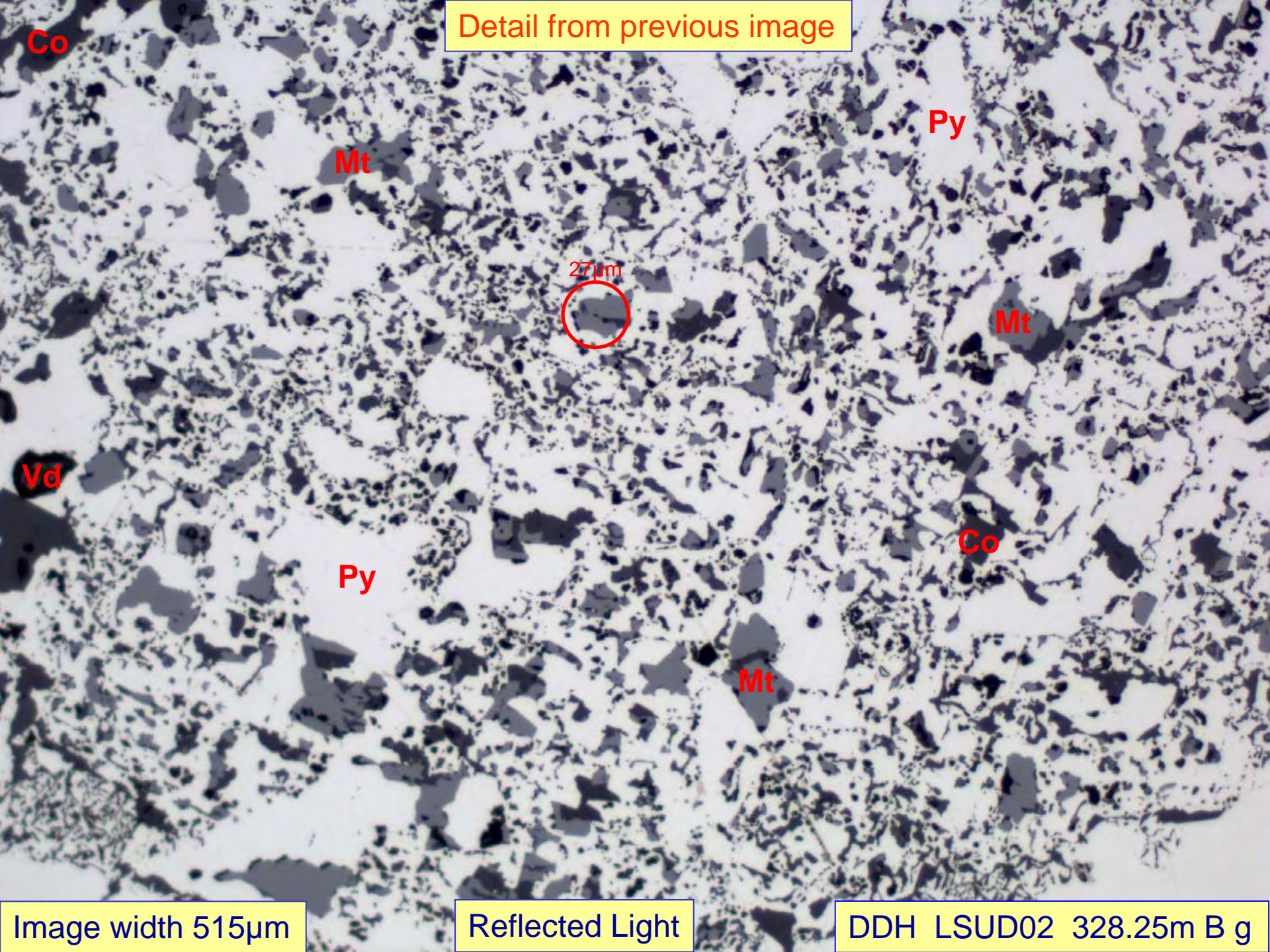
Po

Co

Image width 2.1mm

Reflected Light

DDH LSUD02 328.25m B f



Detail from previous image

Co

Mt

Py

27 μm

Mt

Vd

Py

Co

Mt

Image width 515 μm

Reflected Light

DDH LSUD02 328.25m B g

Massive melnikovite pyrite cut by later carbonate-pyrite veinlet

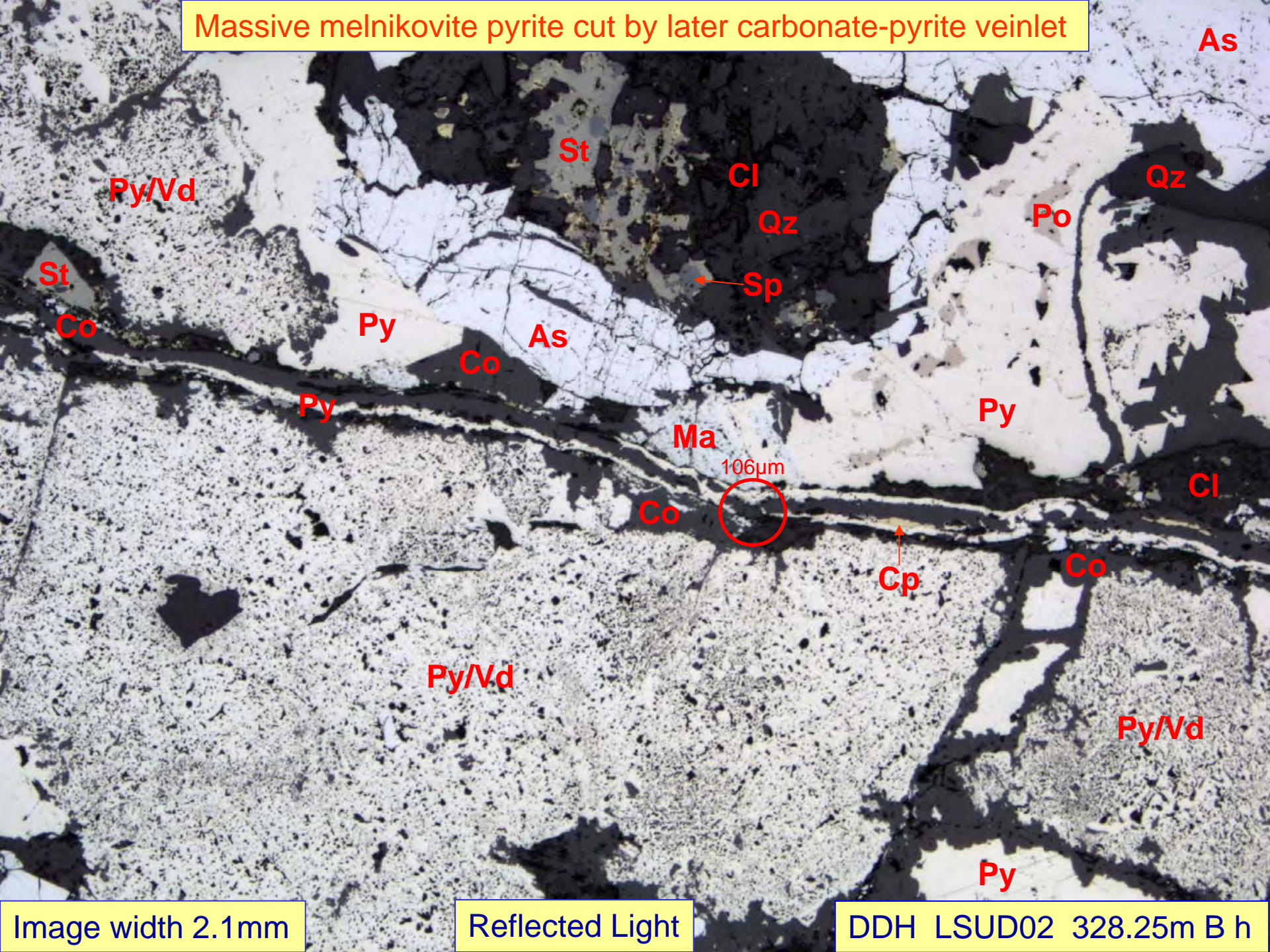
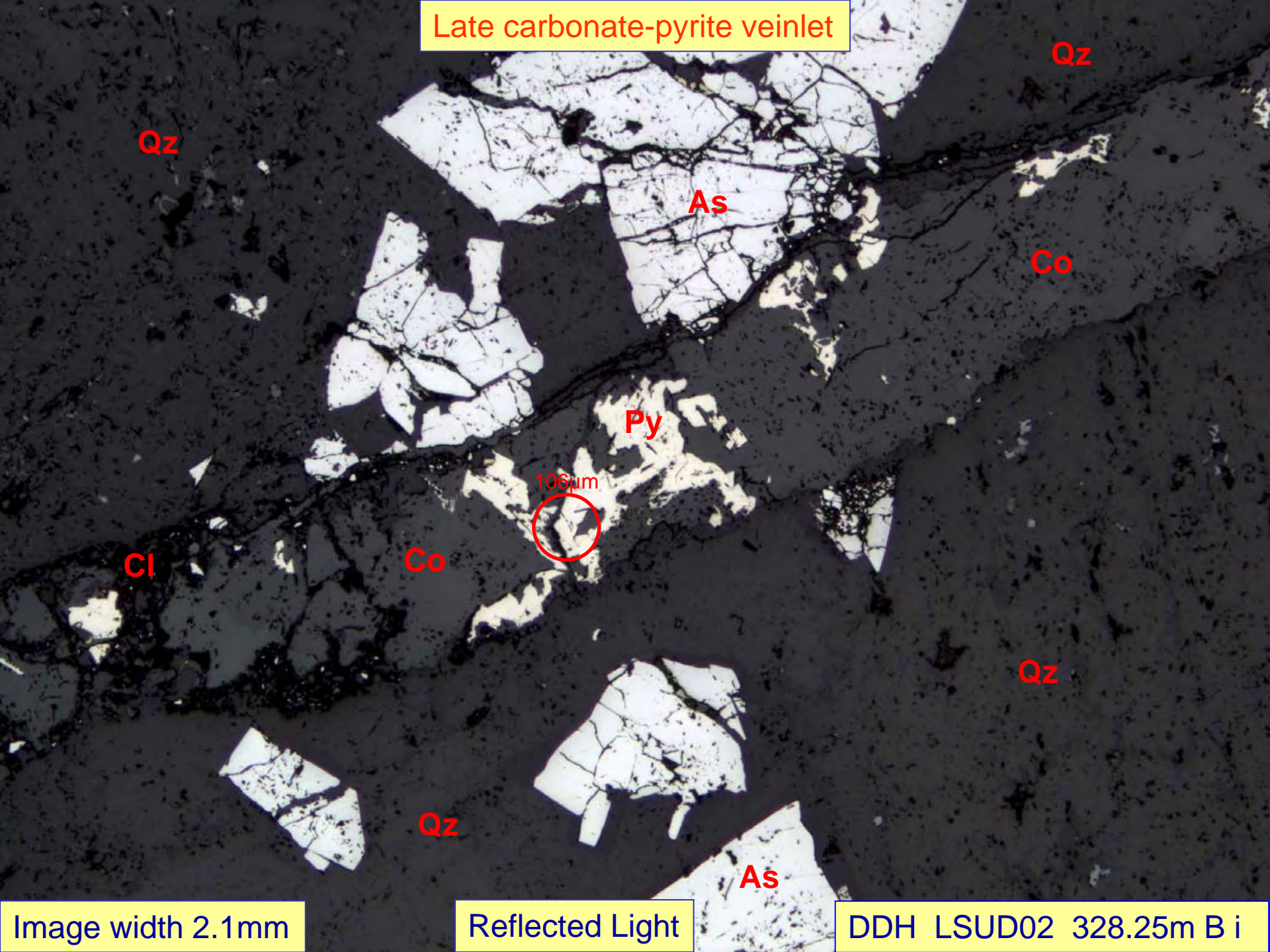


Image width 2.1mm

Reflected Light

DDH LSUD02 328.25m B h

Late carbonate-pyrite veinlet



Qz

Qz

As

Co

Py

106μm

Cl

Co

Qz

Qz

As

Image width 2.1mm

Reflected Light

DDH LSUD02 328.25m B i

Microfault with cataclasised pyrite and remobilised chalcopyrite-stannite

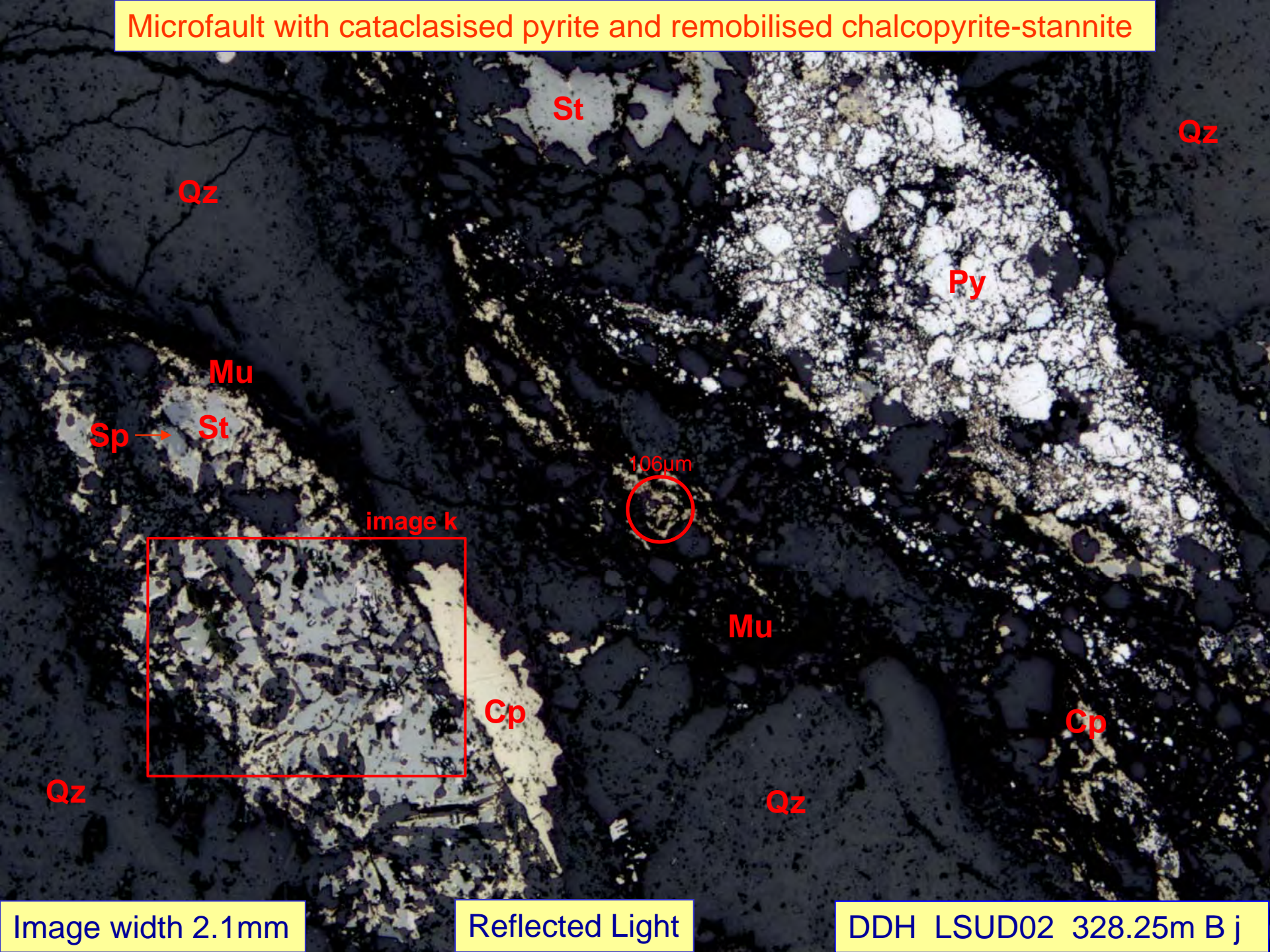
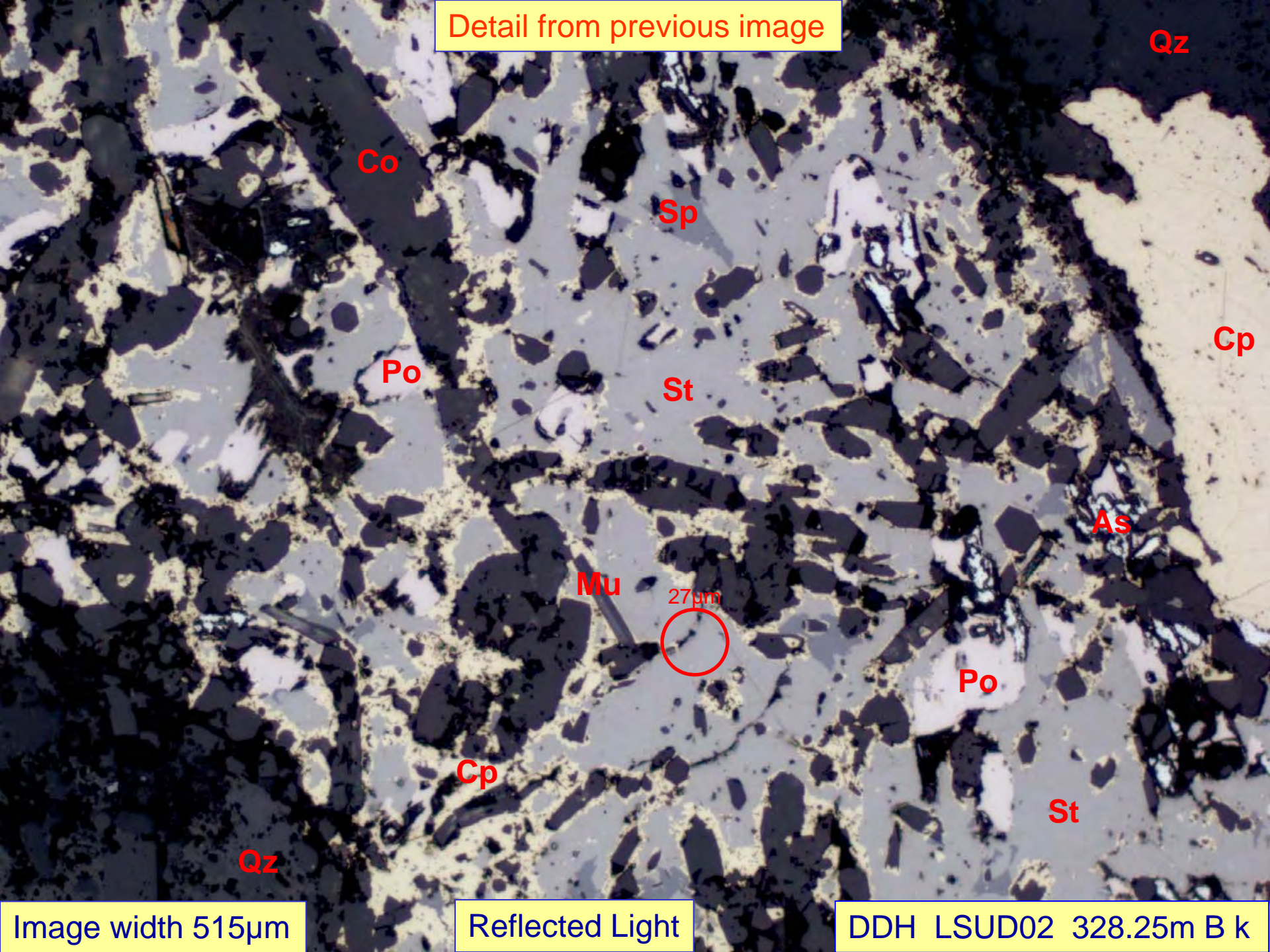


Image width 2.1mm

Reflected Light

DDH LSUD02 328.25m B j

Detail from previous image



Qz

Co

Sp

Cp

Po

St

As

Mu

27µm

Po

Cp

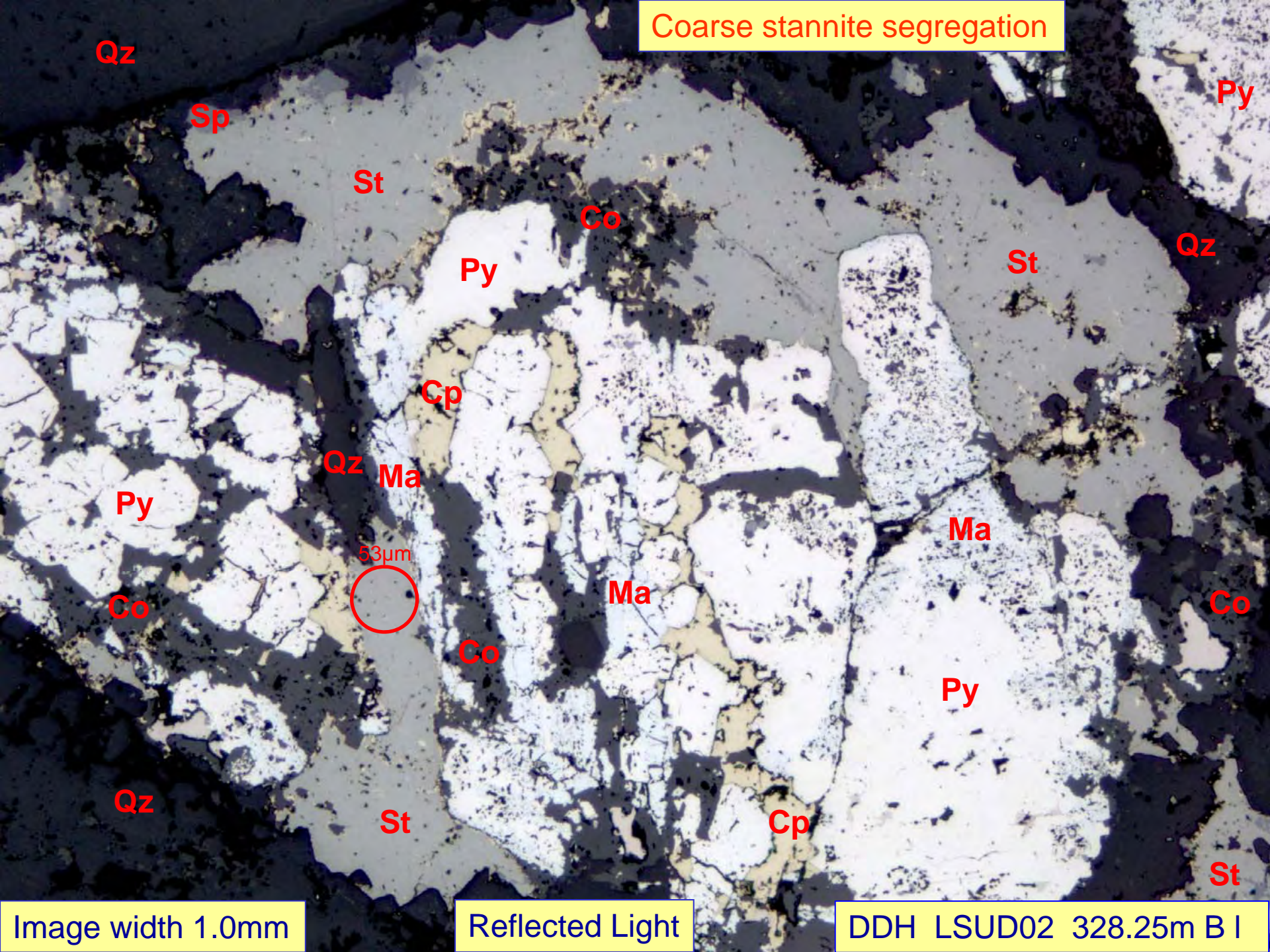
St

Qz

Image width 515µm

Reflected Light

DDH LSUD02 328.25m B k



Coarse stannite segregation

Qz

Sp

St

Co

Py

Py

St

Qz

Cp

Qz

Ma

Py

Ma

Co

53µm

Ma

Co

Co

Py

Qz

St

Cp

St

Image width 1.0mm

Reflected Light

DDH LSUD02 328.25m B I

Offcut Assay

268ppmCu, 403ppmPb, 0.20%Zn, 17ppmBi, 486ppmAs, 0.02%Sn, 3.93%S, 0.51ppmAu



Unity Mining Ltd - Lakeside Drillcore Mineralogy
Sample DDH LSUD02 358.55m

GJMcA 14.2.13

Total Scan Data - 530µm Mask

Average composition																			
	Cp	Sp	Gn	Cs	St	Bm	Bi	Py	Me	Ma	Po	As	Qz	Cl	Co	Mu	Ru	Cy	Other
Vol%	0.0	1.5	0.0	0.0	0.0	0.0	0.0	5.7	0.0	0.0	0.0	0.0	63.2	2.4	0.0	27.2	0.0	0.0	0.0
Wt%	0.0	2.2	0.1	0.0	0.0	0.0	0.0	10.1	0.0	0.0	0.0	0.0	58.4	2.2	0.0	27.1	0.0	0.0	0.0

ASSAYS										ppm
SG	%Cu	%Pb	%Zn	%As	%Sn	%Bi	%Fe	Au		
2.83	0.00	0.05	1.38	0.00	0.00	0.00	5.01			
	0.03	0.04	0.20	0.05	0.02	0.00		0.51		

Calc'd									
Actual									

Mineral Abbreviations			
Cp	Chalcopyrite	Ma	Marcasite
Sp	Sphalerite	Po	Pyrrhotite
Gn	Galena	As	Arsenopyrite
Cs	Cassiterite	Qz	Quartz
St	Stannite	Cl	Chlorite
Bm	Bismuthinite	Co	Carbonate
Bi	Native Bismuth	Mu	Muscovite
Py	Pyrite	Ru	Rutile
Me	Melnikovite	Cy	Clay

Economic Mineral Scan Data - 53µm Mask

COMPOSITE PROPORTIONS

	Cp	Sp	Gn	Cs	St	Bm	Bi
Mono	61	61	0	0	0	0	0
Binary	28	32	95	0	0	0	0
Ternary	10	5	5	0	0	0	0
Quat.y+	1	3	0	0	0	0	0

BINARY ASSOCIATION MATRIX

	Cp	Sp	Gn	Cs	St	Bm	Bi	Py	Me	Ma	Po	As	Ga
Cp		3	0	0	0	0	0	1	0	0	0	0	24
Sp	28		0	0	0	0	0	0	0	0	0	0	4
Gn	0	0		0	0	0	0	90	0	0	0	0	5
Cs	0	0	0		0	0	0	0	0	0	0	0	0
St	0	0	0	0		0	0	0	0	0	0	0	0
Bm	0	0	0	0	0		0	0	0	0	0	0	0
Bi	0	0	0	0	0	0		0	0	0	0	0	0

TOTAL ASSOCIATION MATRIX

	Cp	Sp	Gn	Cs	St	Bm	Bi	Py	Me	Ma	Po	As	Ga
Cp		14	0	0	0	0	0	2	0	0	0	0	35
Sp	36		0	0	0	0	0	0	0	0	0	0	11
Gn	0	0		0	0	0	0	95	0	0	0	0	10
Cs	0	0	0		0	0	0	0	0	0	0	0	0
St	0	0	0	0		0	0	0	0	0	0	0	0
Bm	0	0	0	0	0		0	0	0	0	0	0	0
Bi	0	0	0	0	0	0		0	0	0	0	0	0

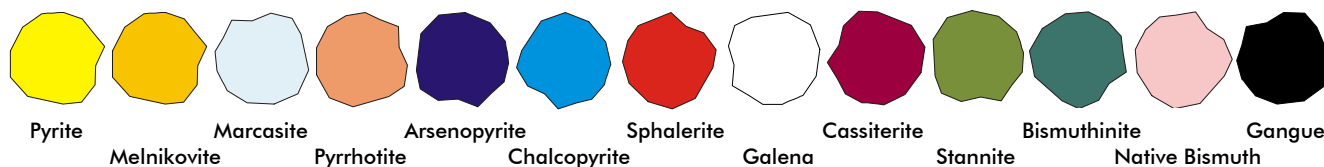
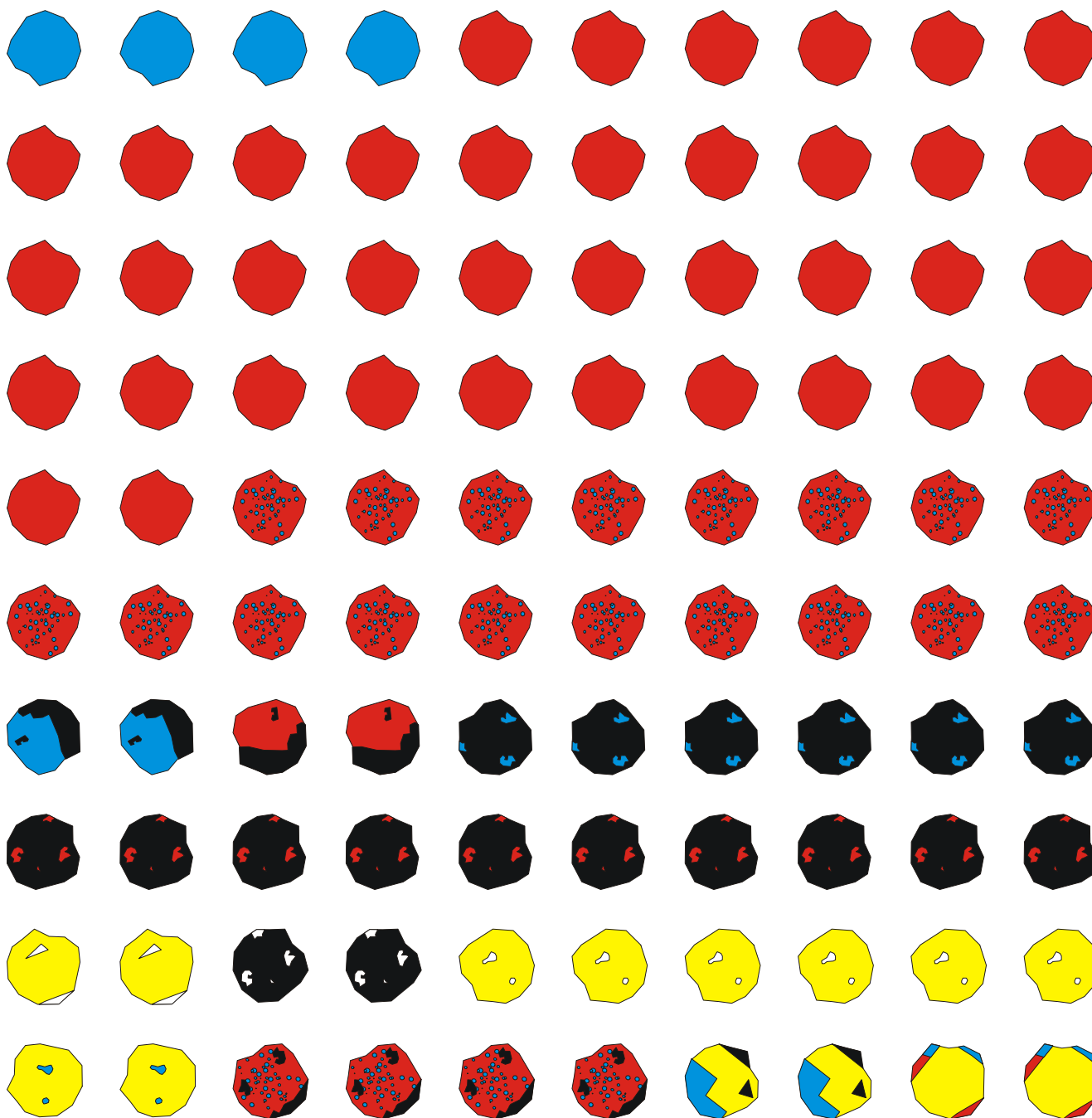
of all

Unity Mining - Lakeside Drillcore Mineralogy

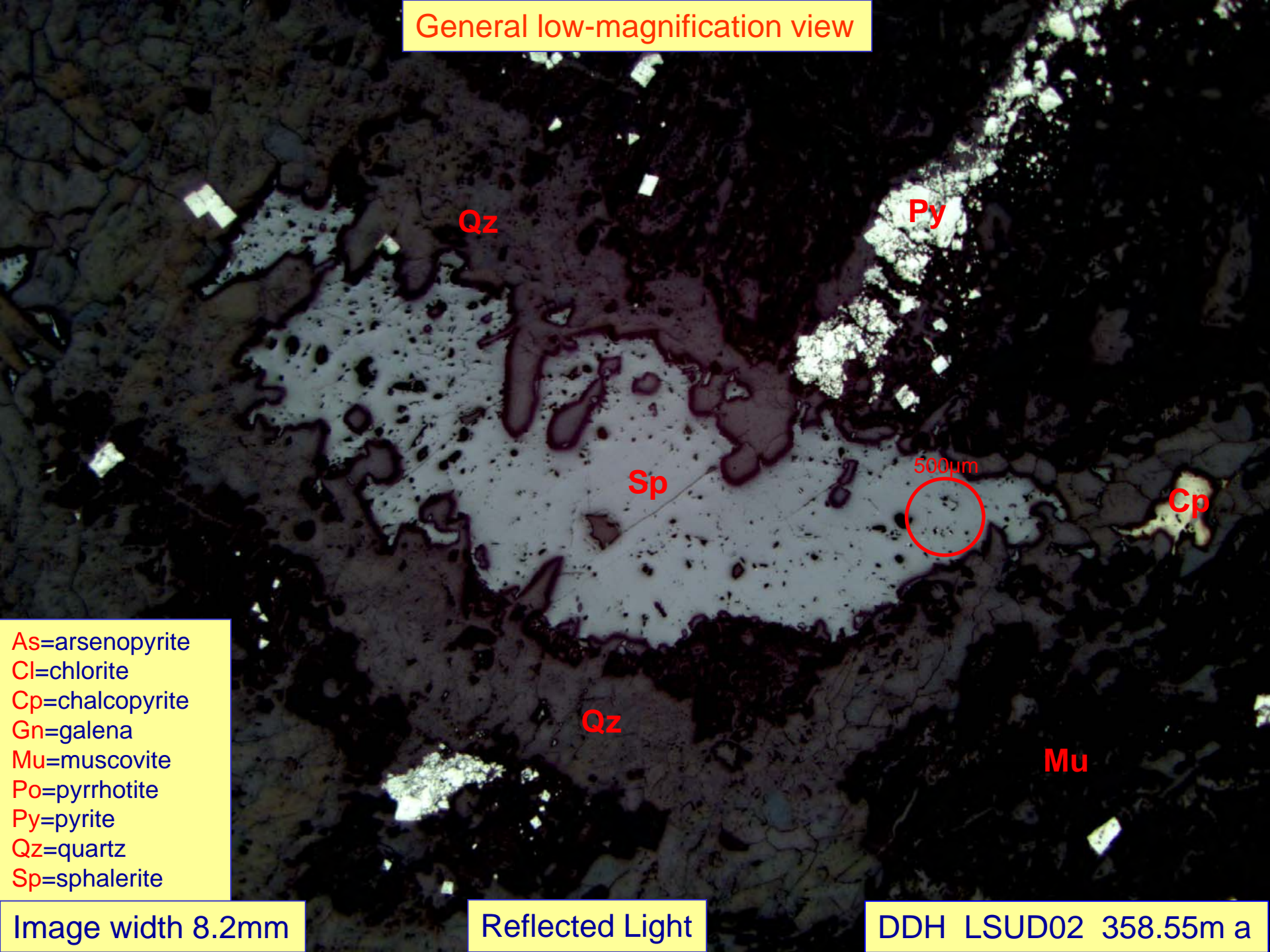
DDH LSUD02 358.55m
Cu-Sn-Bi-Zn-Pb SCAN

53µm Mask

February 2013



General low-magnification view



As=arsenopyrite
Cl=chlorite
Cp=chalcopyrite
Gn=galena
Mu=muscovite
Po=pyrrhotite
Py=pyrite
Qz=quartz
Sp=sphalerite

Image width 8.2mm

Reflected Light

DDH LSUD02 358.55m a

Coarse remobilised sphalerite-chalcopyrite

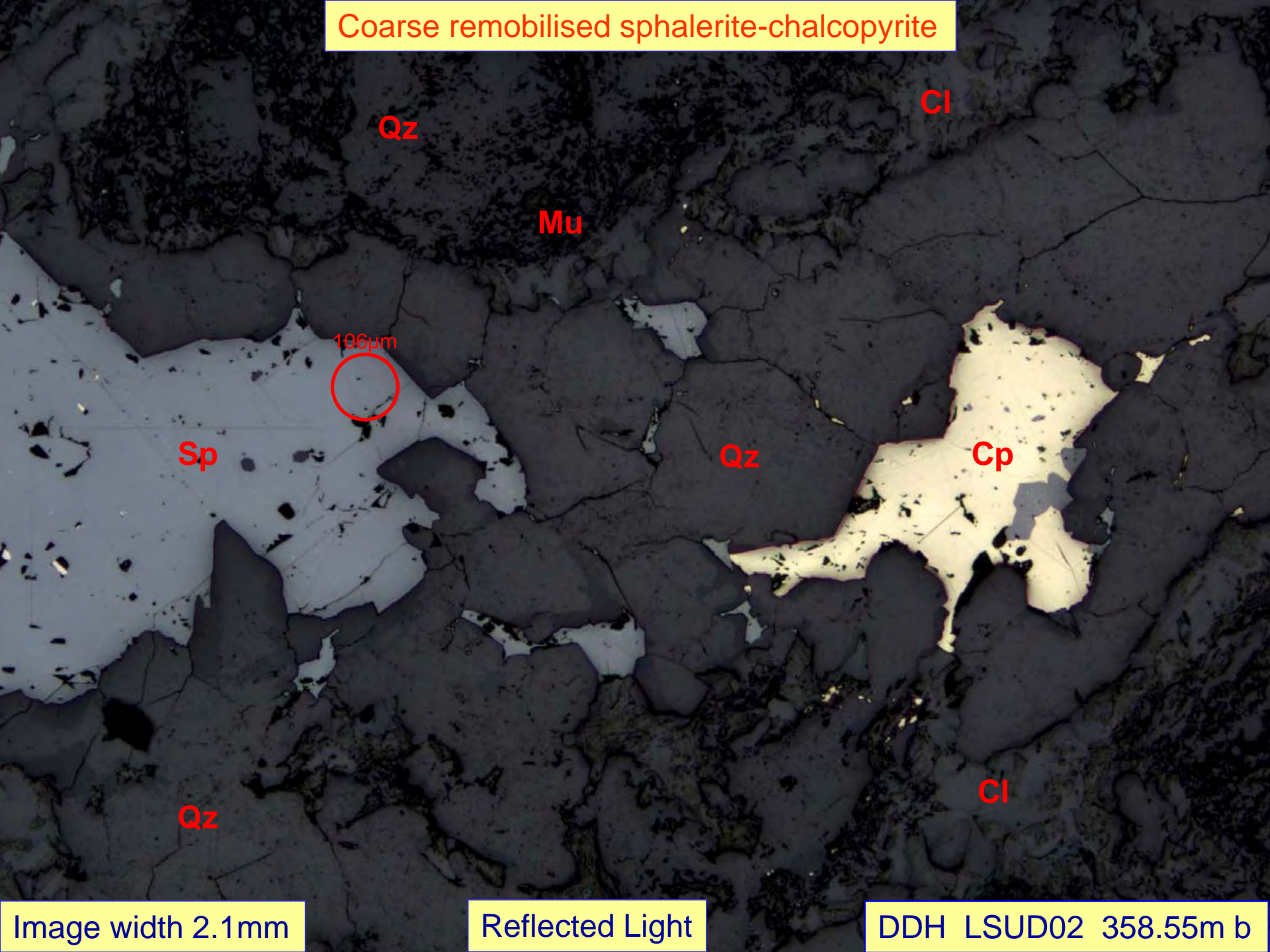


Image width 2.1mm

Reflected Light

DDH LSUD02 358.55m b

Coarse Fe-rich sphalerite and galena

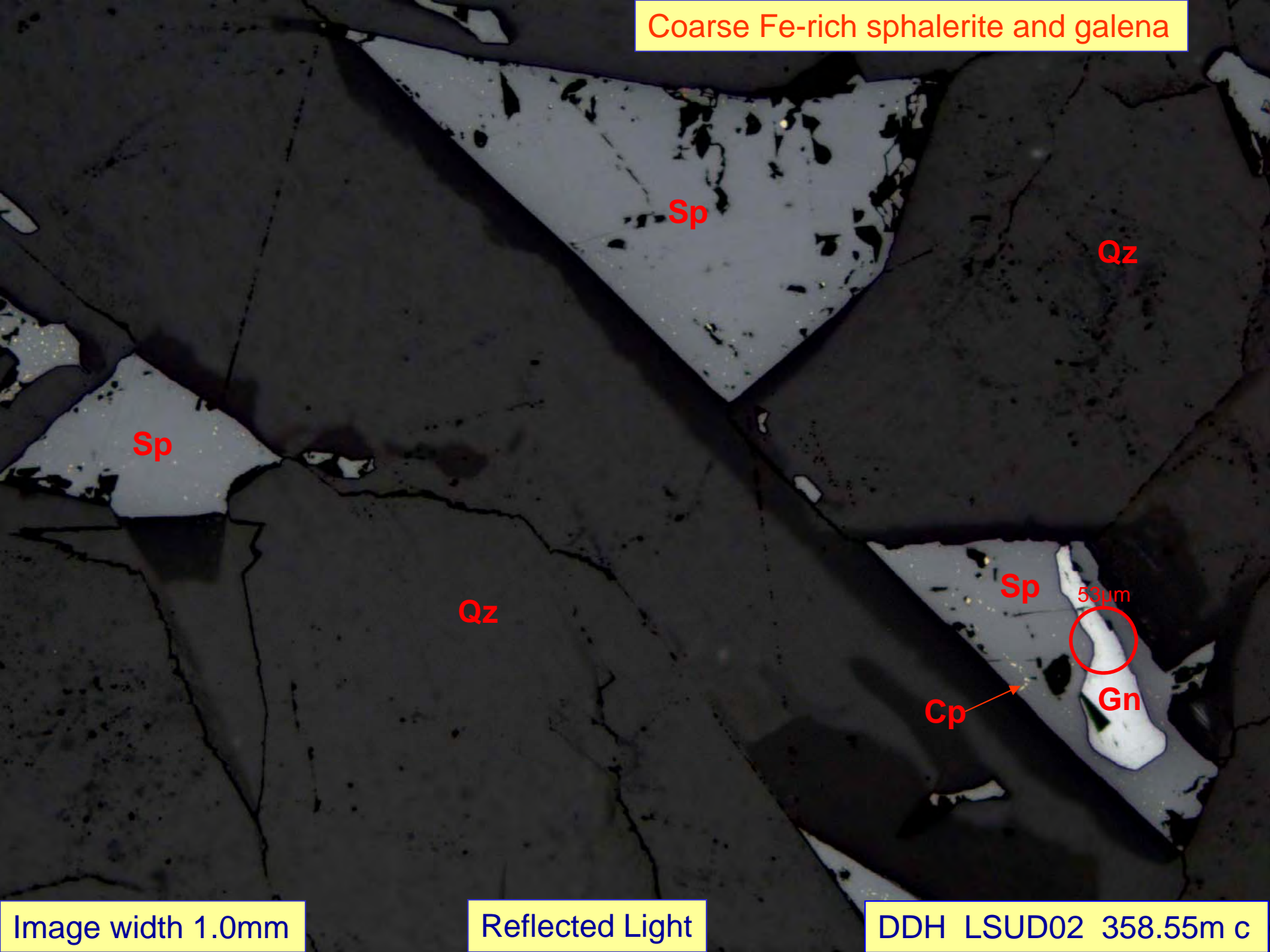


Image width 1.0mm

Reflected Light

DDH LSUD02 358.55m c

Zonal galena refined out of pyrite

Qz

Cl

Cl

Qz

Gn

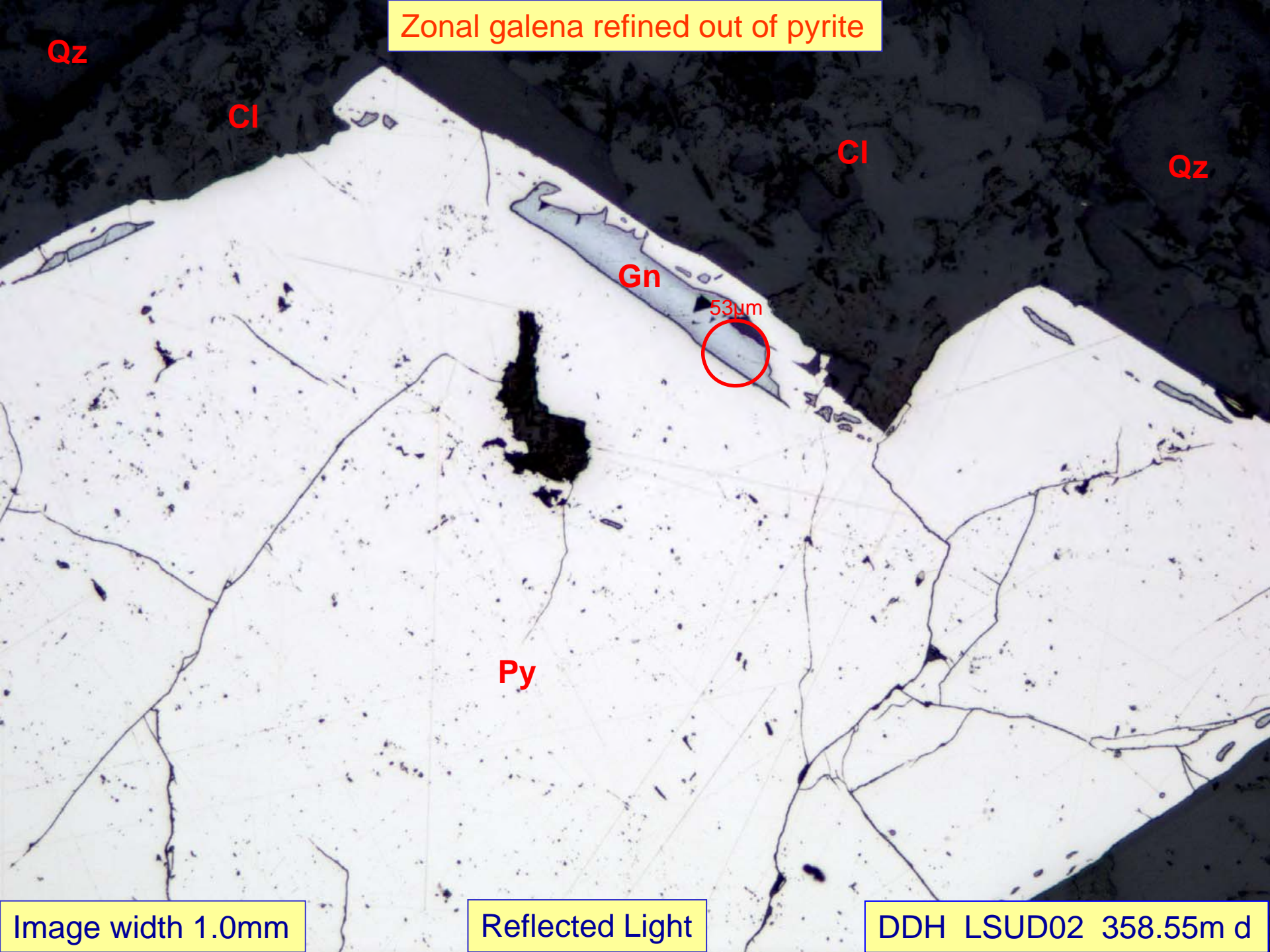
53µm

Py

Image width 1.0mm

Reflected Light

DDH LSUD02 358.55m d



Coarse chalcopyrite

Qz

Gn

Cl

Sp

Po

Qz

Cp

53µm

Cp

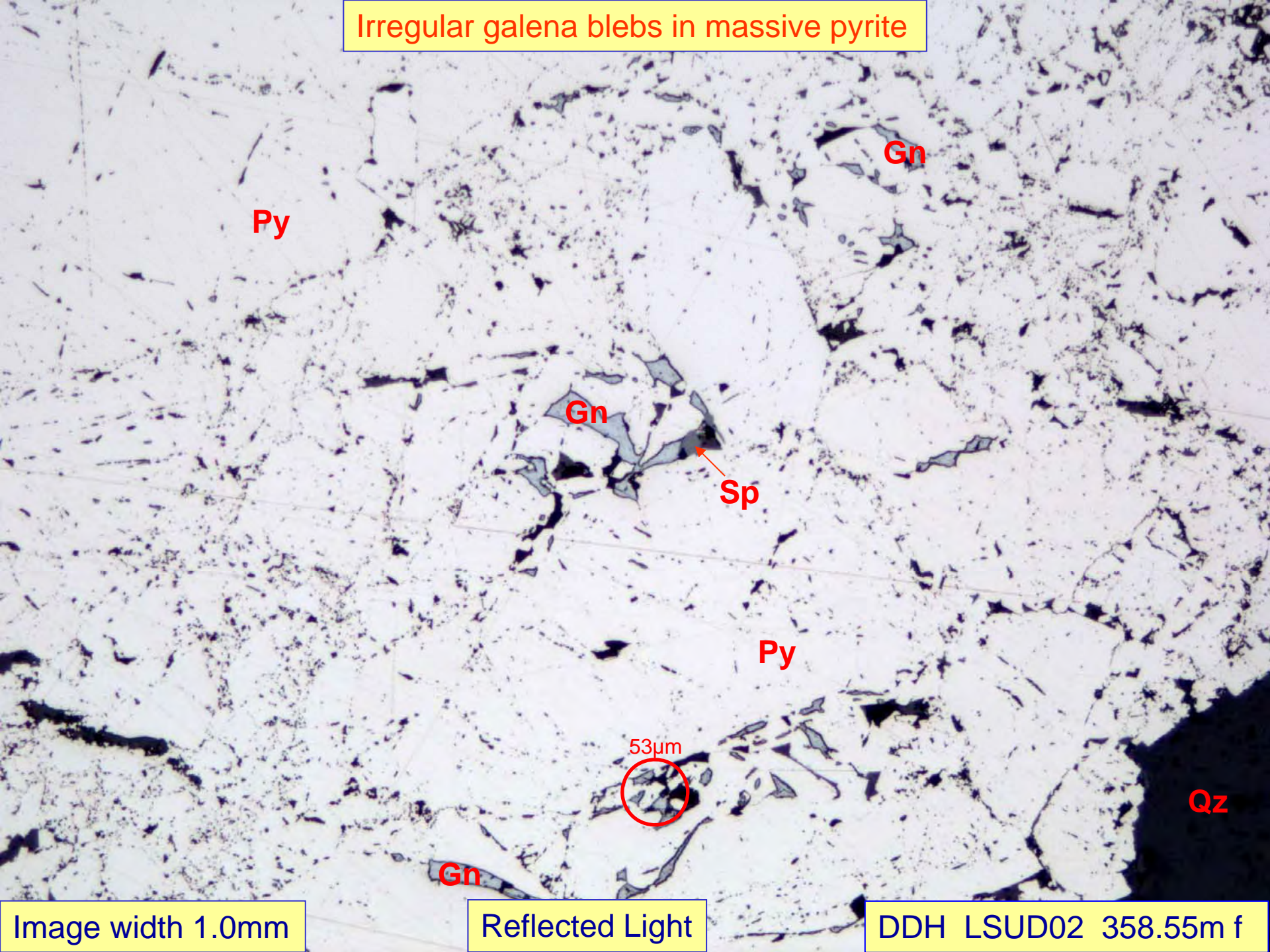
Qz

Image width 1.0mm

Reflected Light

DDH LSUD02 358.55m e

Irregular galena blebs in massive pyrite



Py

Gn

Gn

Sp

Py

Qz

53µm

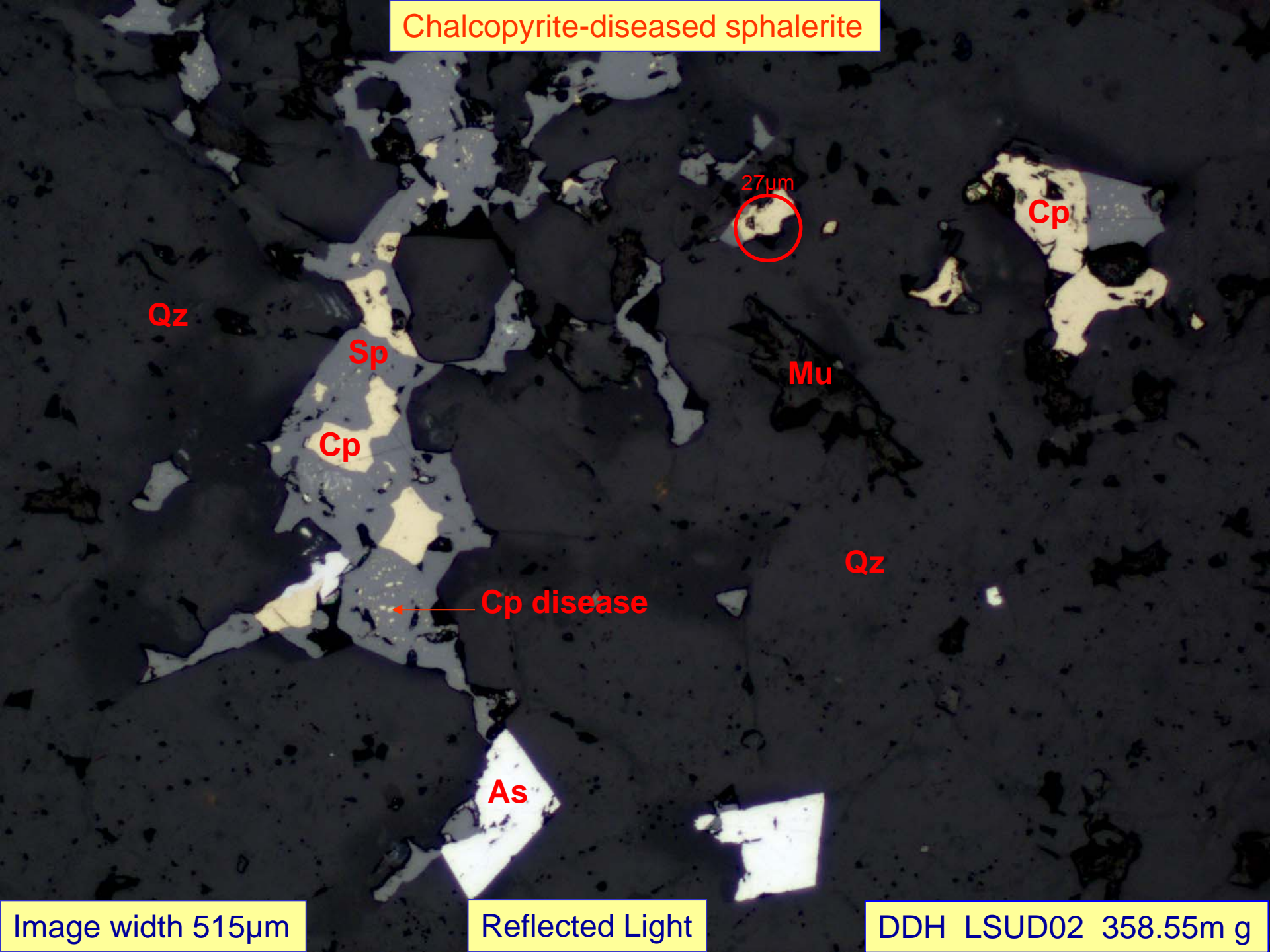
Gn

Image width 1.0mm

Reflected Light

DDH LSUD02 358.55m f

Chalcopyrite-diseased sphalerite



Qz

Sp

Cp

Cp disease

As

Mu

Qz

Cp

27µm

Image width 515µm

Reflected Light

DDH LSUD02 358.55m g

Offcut Assay

882ppmCu, 148ppmPb, 160ppmZn, 32ppmBi, 0.18%As, 0.06%Sn, 6.79%S, 3.55ppmAu

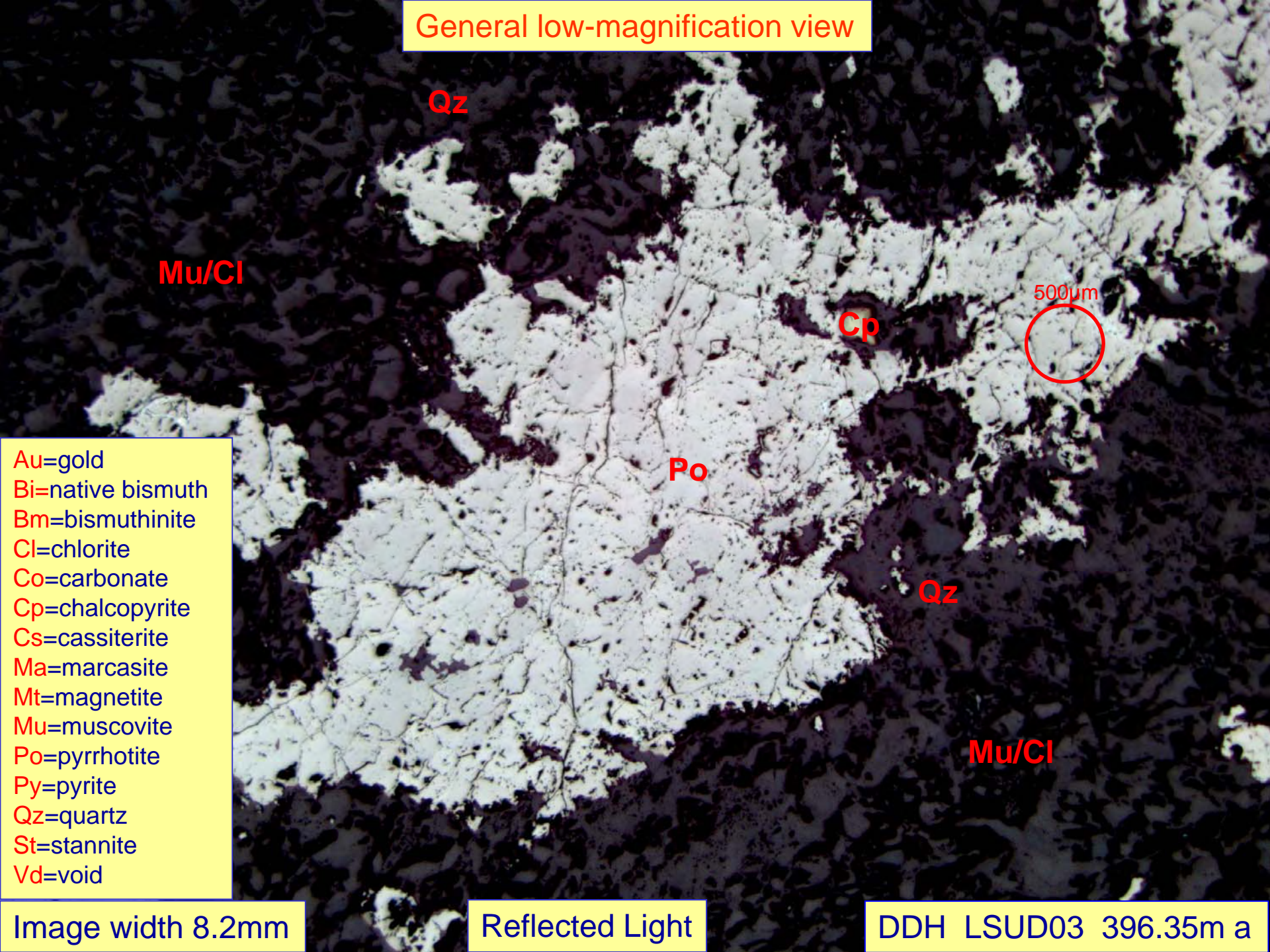


		TOTAL ASSOCIATION MATRIX												
		Cp	Sp	Gn	Cs	St	Bm	Bi	Py	Me	Ma	Po	As	Ga
of all	Cp		3	0	0	9	0	0	0	0	0	25	0	82
	Sp	100		0	0	0	0	0	0	0	0	100	0	100
	Gn	0	0		0	0	0	0	0	0	0	0	0	0
	Cs	0	0	0		0	0	0	0	0	0	100	0	100
	St	77	0	0	0		0	0	0	0	0	61	0	100
	Bm	0	0	0	0	0		10	0	0	0	29	0	100
	Bi	0	0	0	0	0	100		0	0	0	100	0	100

February 2013

Pyrite Melnikovite Marcasite Pyrrhotite Arsenopyrite Chalcopyrite Sphalerite Galena Cassiterite Stannite Bismuthinite Native Bismuth Gangue

General low-magnification view



Mu/Cl

Qz

Cp

500µm

Po

Qz

Mu/Cl

Au=gold
Bi=native bismuth
Bm=bismuthinite
Cl=chlorite
Co=carbonate
Cp=chalcopyrite
Cs=cassiterite
Ma=marcasite
Mt=magnetite
Mu=muscovite
Po=pyrrhotite
Py=pyrite
Qz=quartz
St=stannite
Vd=void

Image width 8.2mm

Reflected Light

DDH LSUD03 396.35m a

Irregularly-margined massive pyrrhotite with exsolved marcasite flames

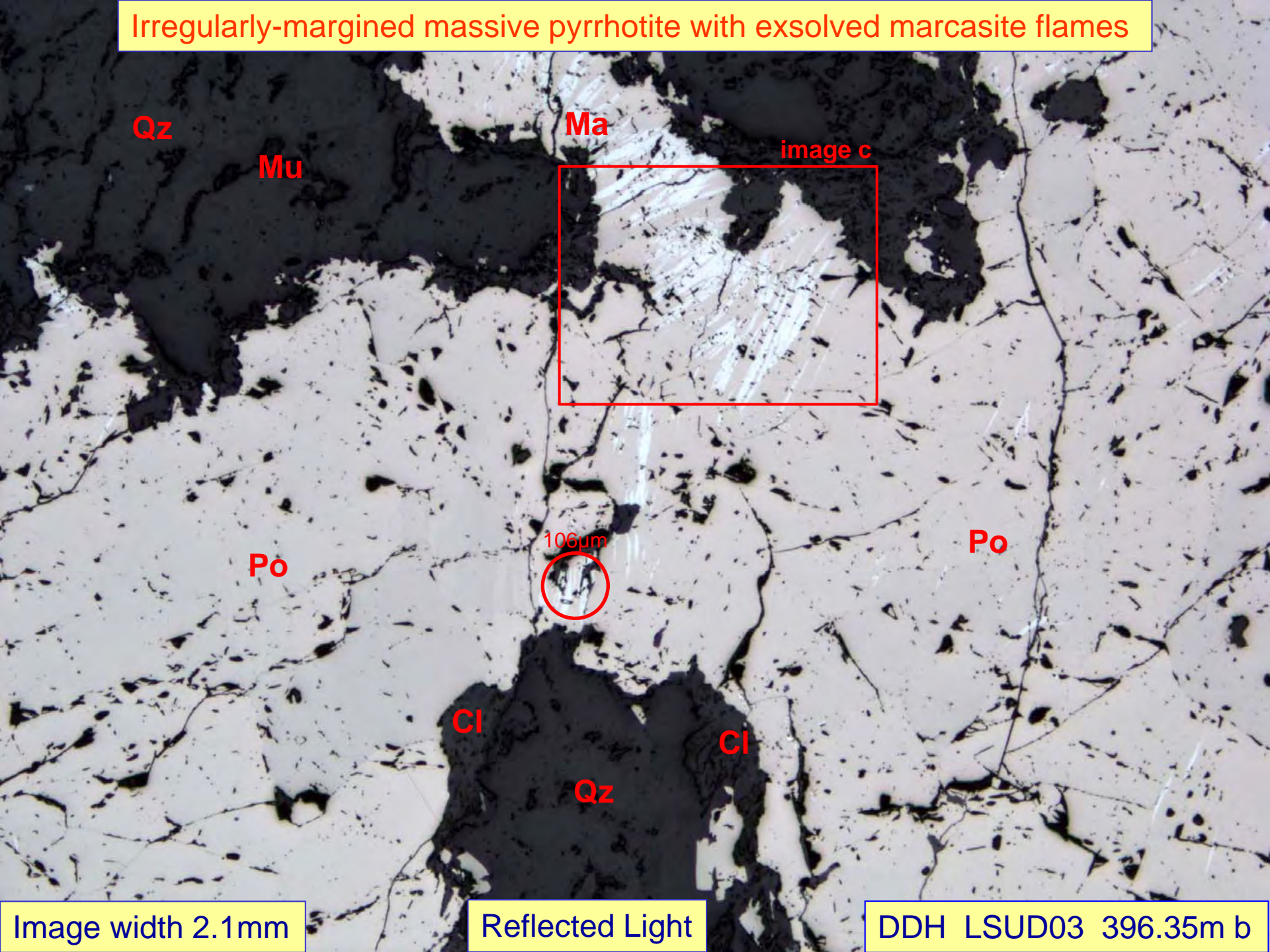


Image width 2.1mm

Reflected Light

DDH LSUD03 396.35m b

Detail from previous image

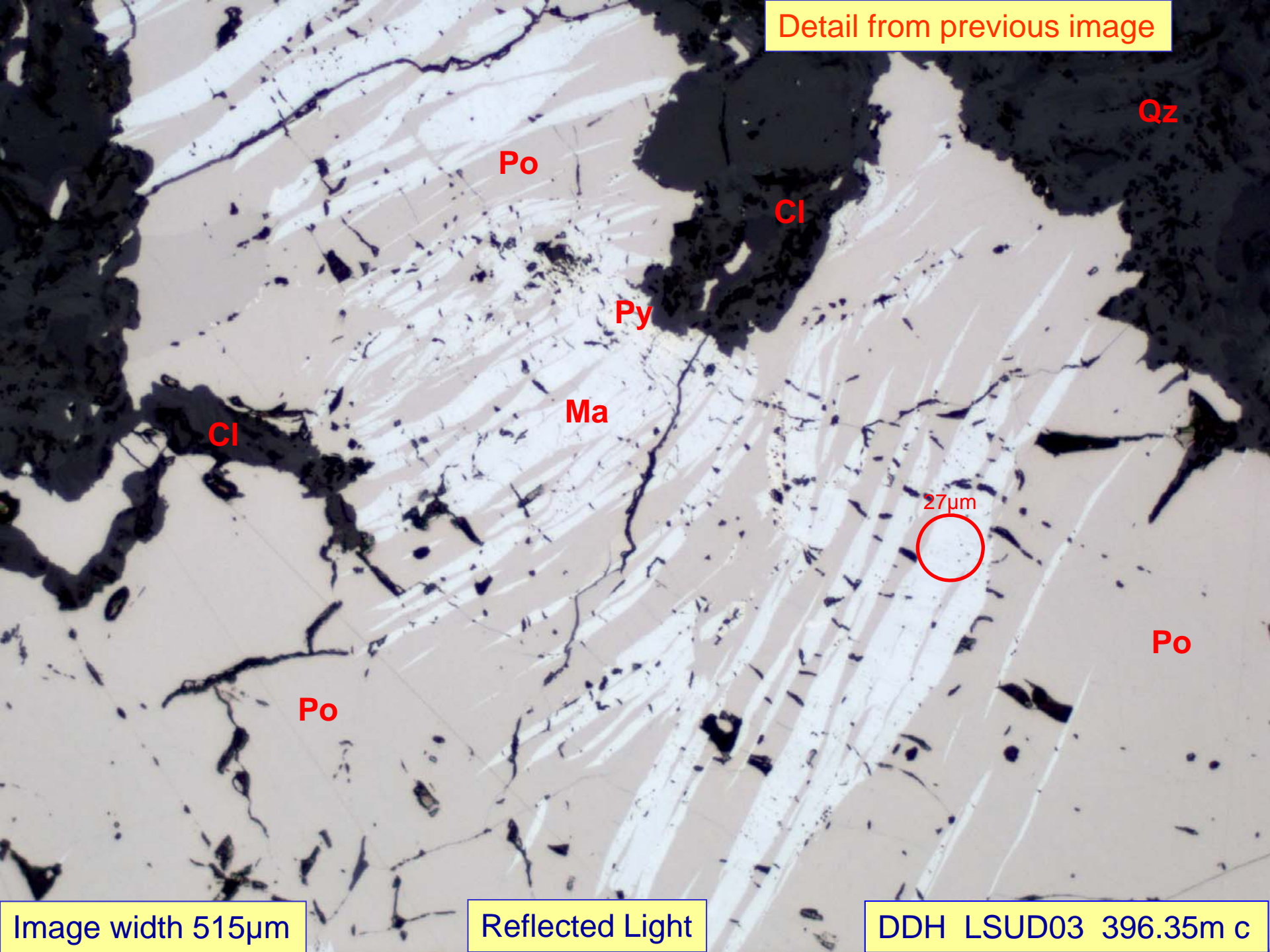


Image width 515µm

Reflected Light

DDH LSUD03 396.35m c

Marginal chalcopyrite-stannite

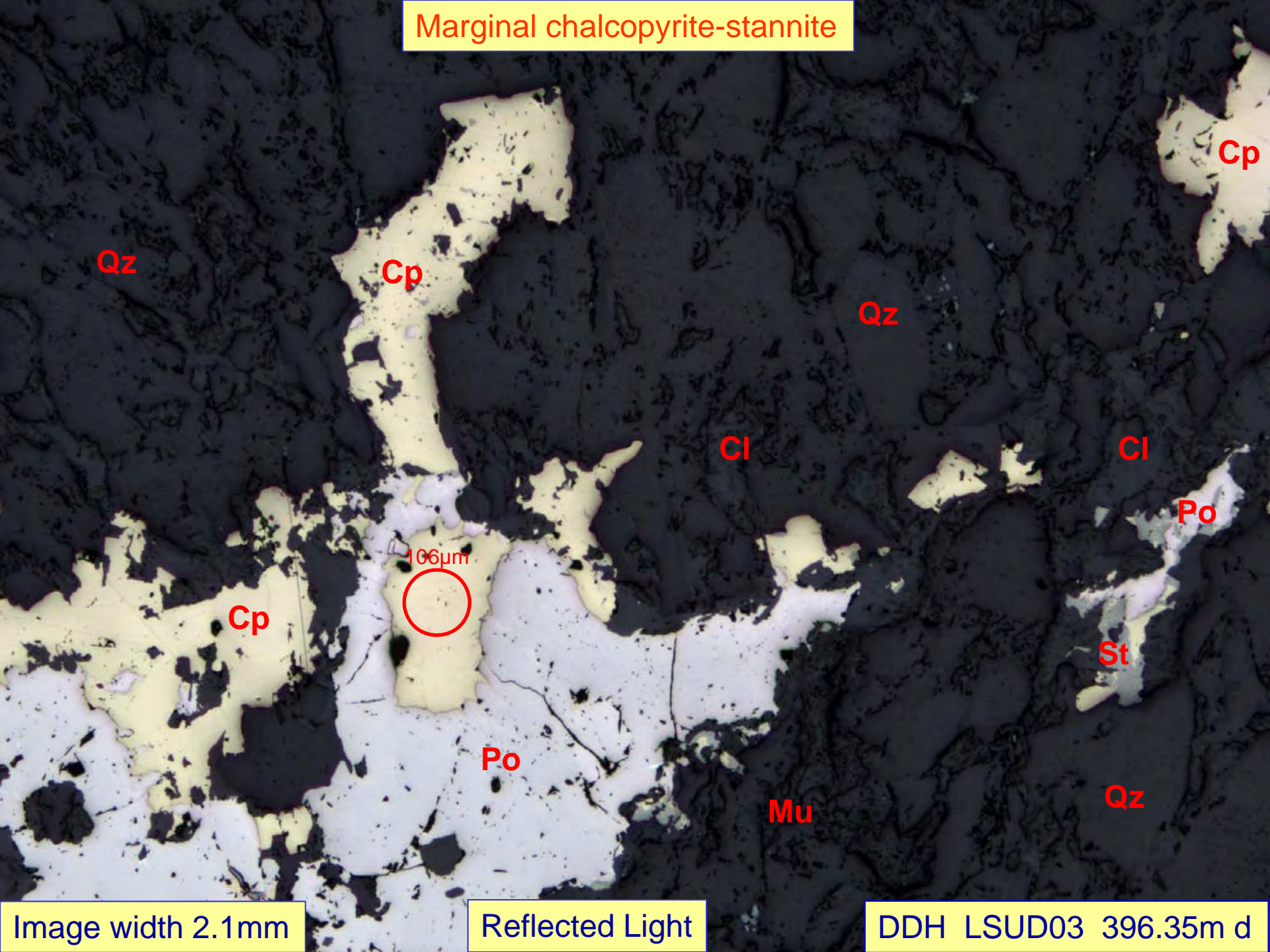


Image width 2.1mm

Reflected Light

DDH LSUD03 396.35m d

Irregular bismuthinite

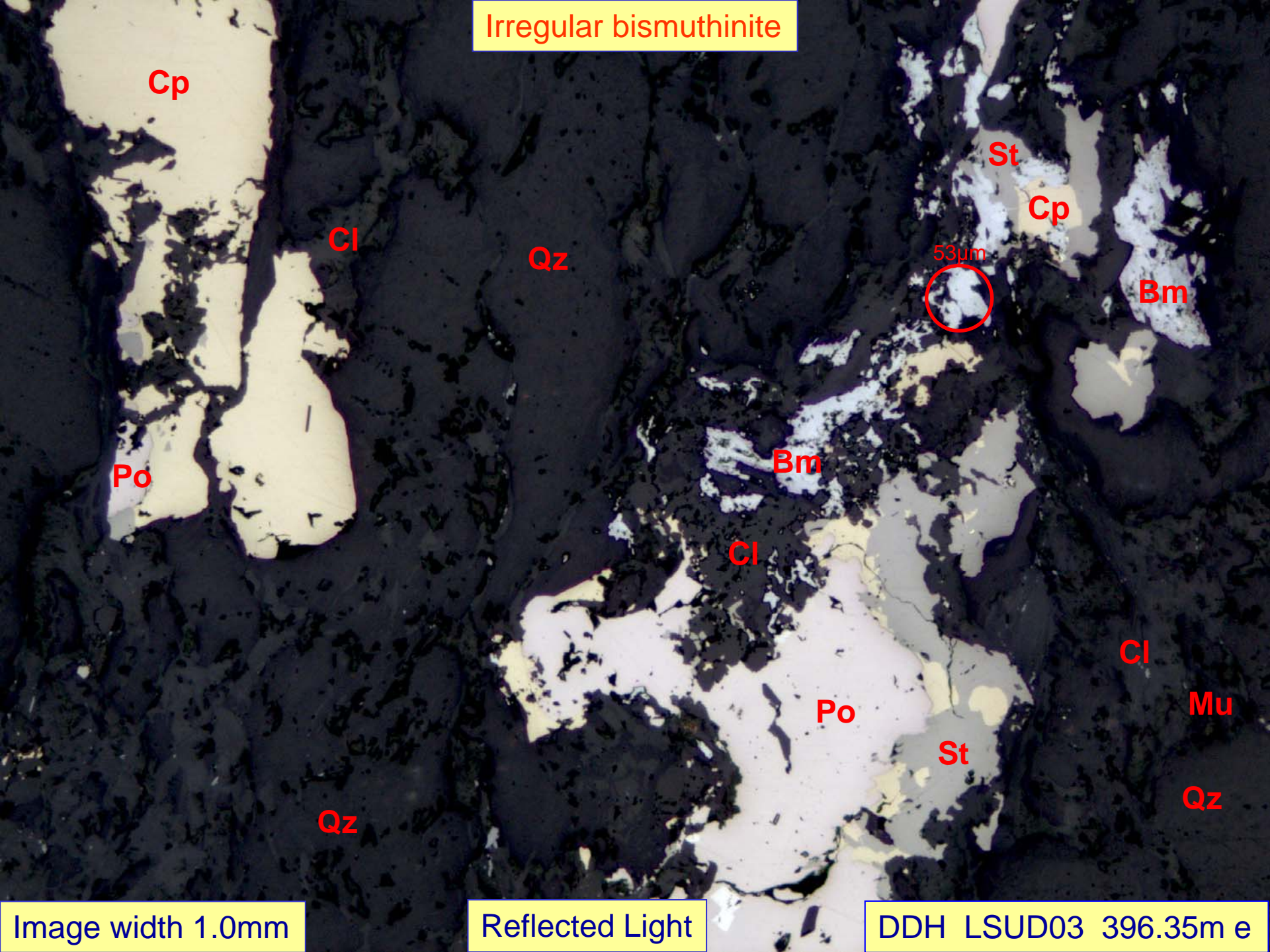


Image width 1.0mm

Reflected Light

DDH LSUD03 396.35m e

Pyrite-magnetite relic in pyrrhotite

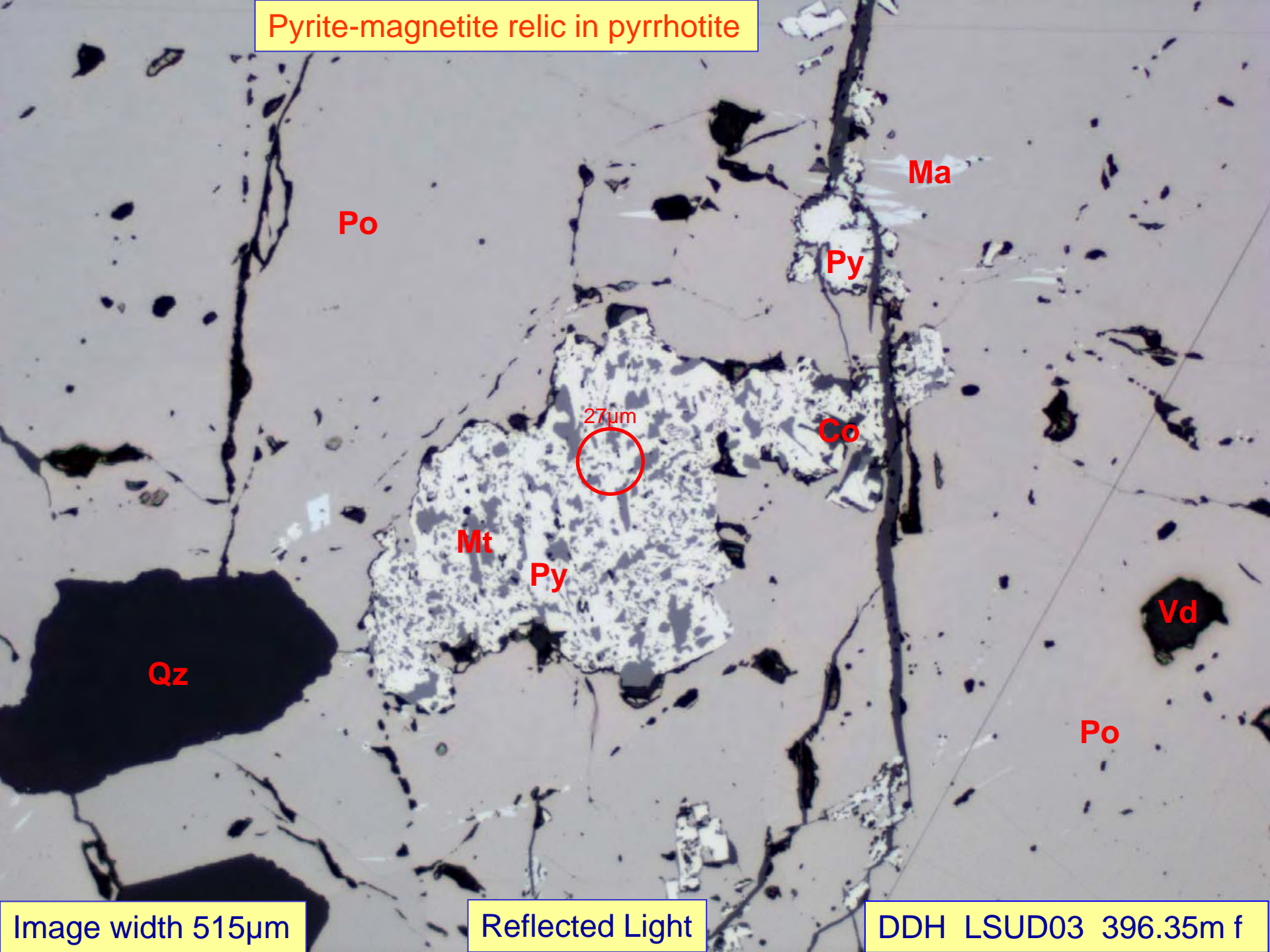
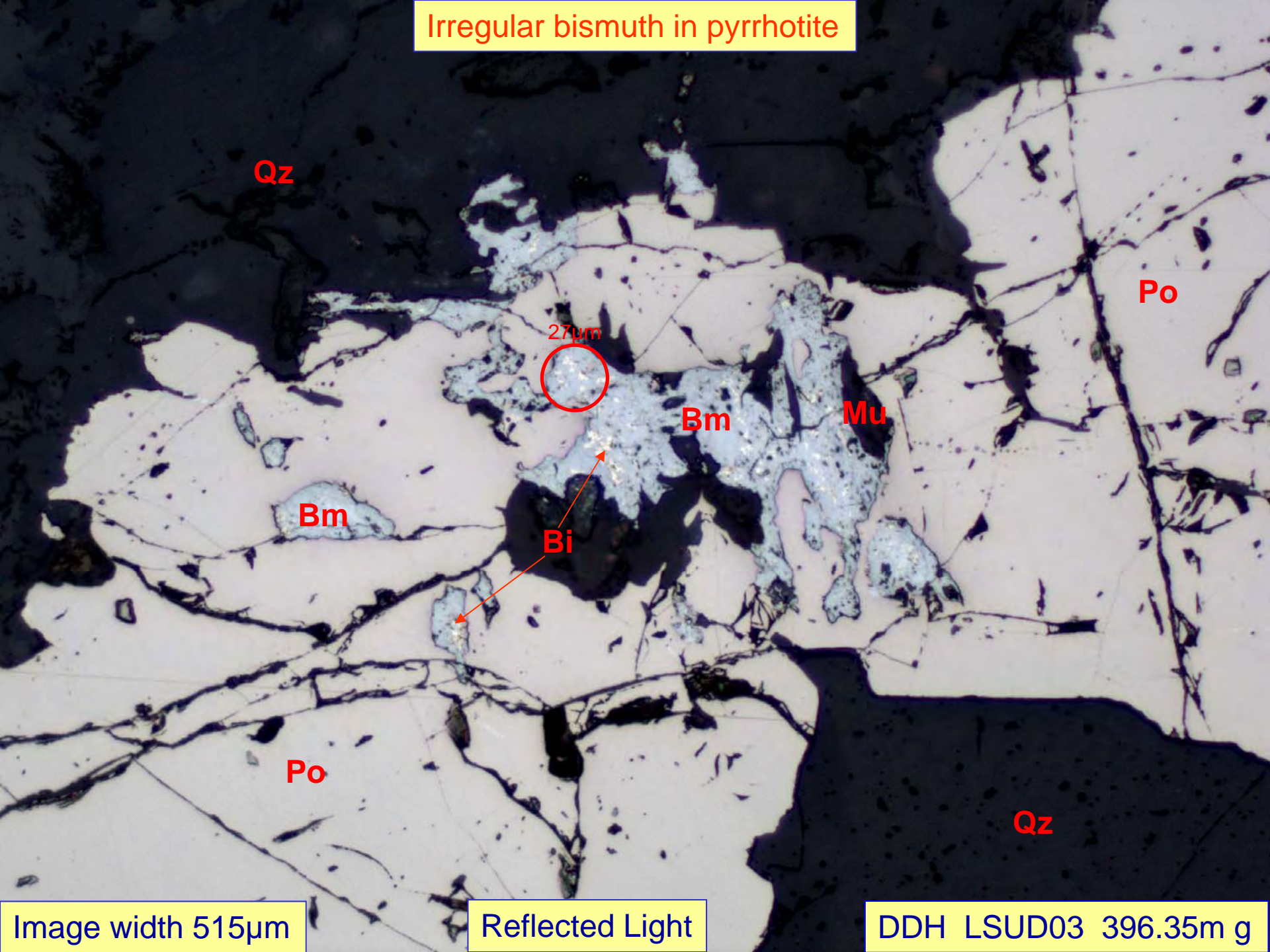


Image width 515µm

Reflected Light

DDH LSUD03 396.35m f

Irregular bismuth in pyrrhotite



Qz

Po

27µm

Bm

Mu

Bm

Bi

Po

Qz

Image width 515µm

Reflected Light

DDH LSUD03 396.35m g

Stannite rims with gold

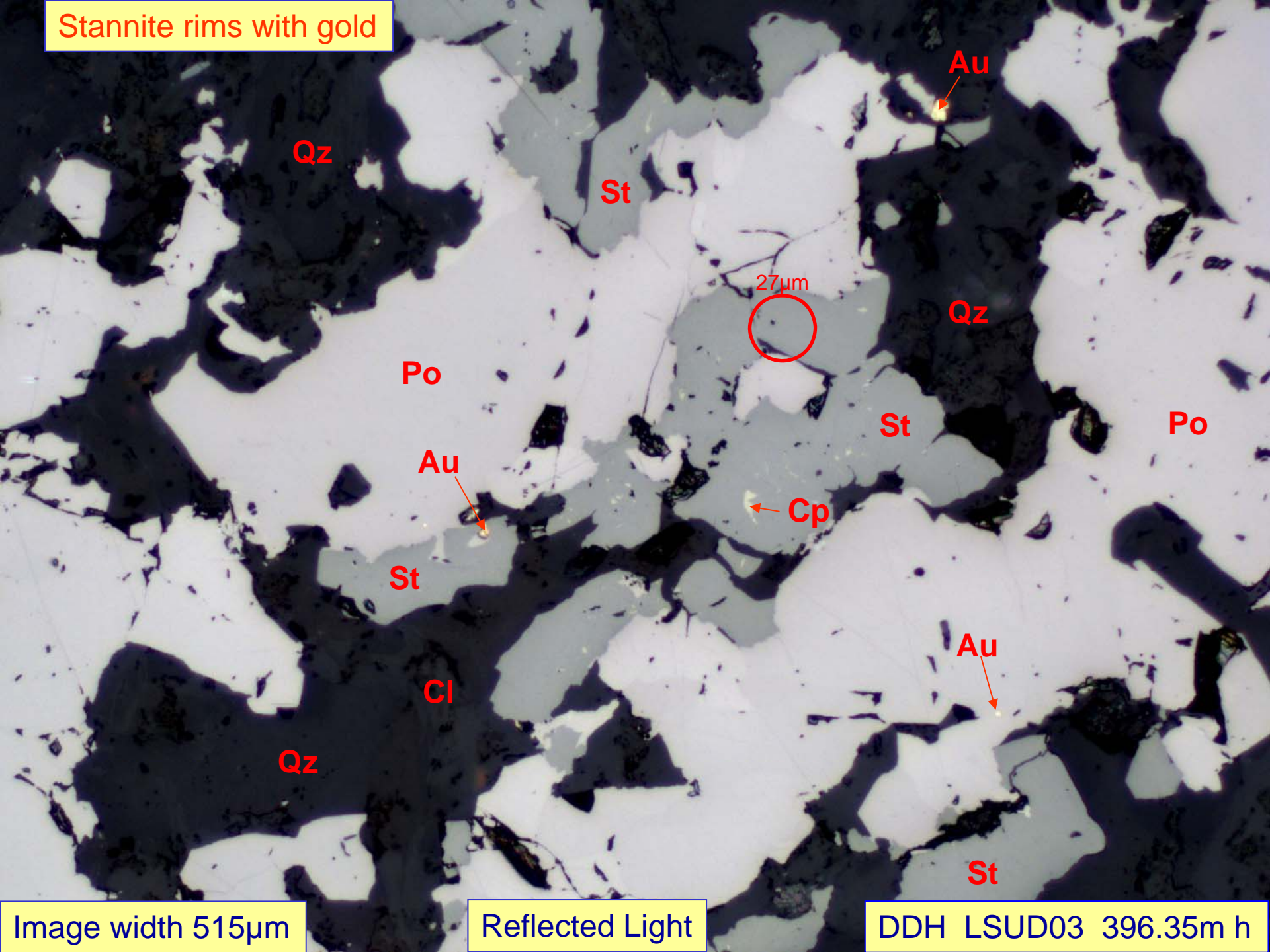


Image width 515µm

Reflected Light

DDH LSUD03 396.35m h

Detail of multiple gold grains
note: Au in bismuthinite is paler

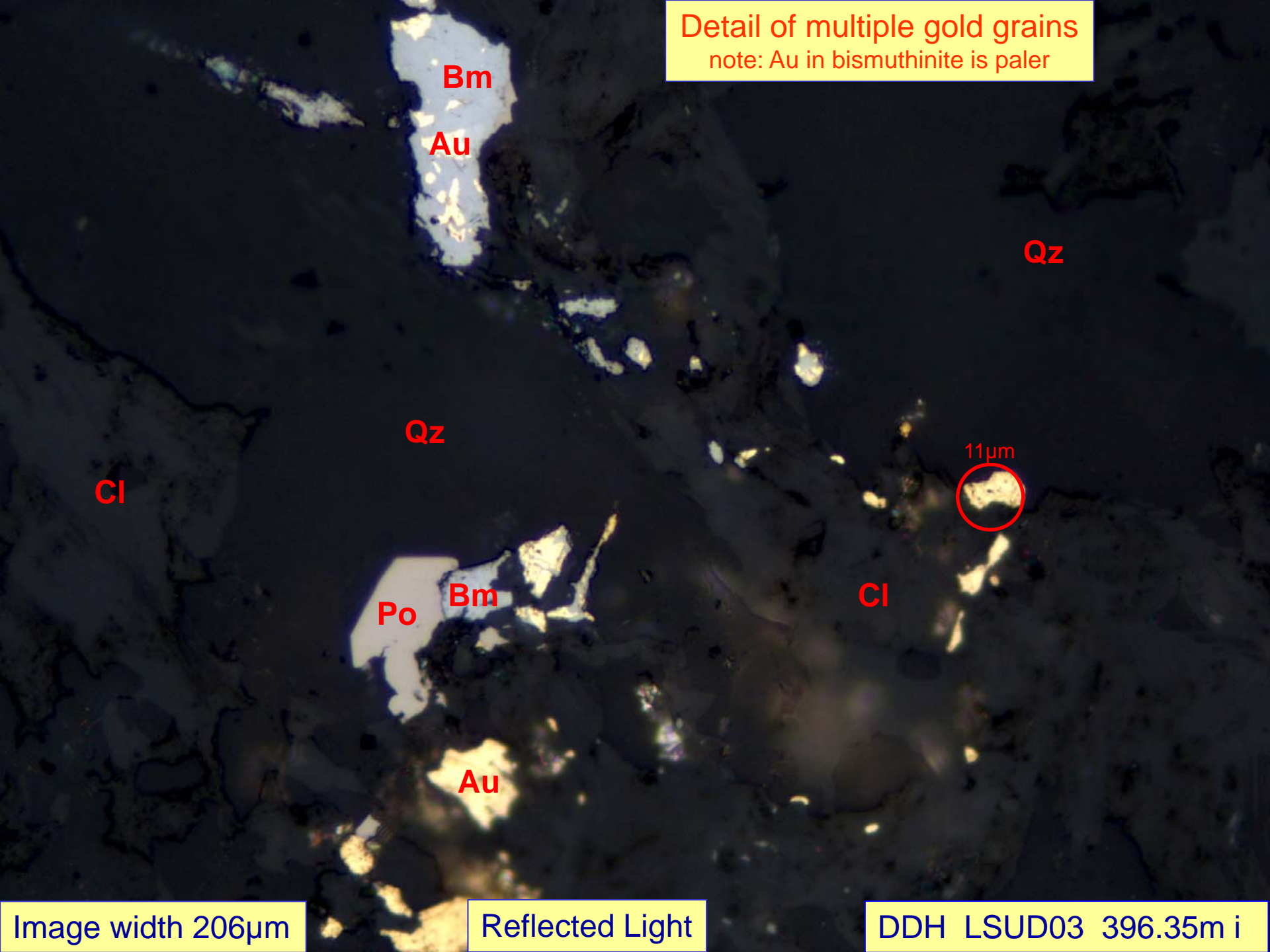


Image width 206µm

Reflected Light

DDH LSUD03 396.35m i

Detail of multiple gold grains

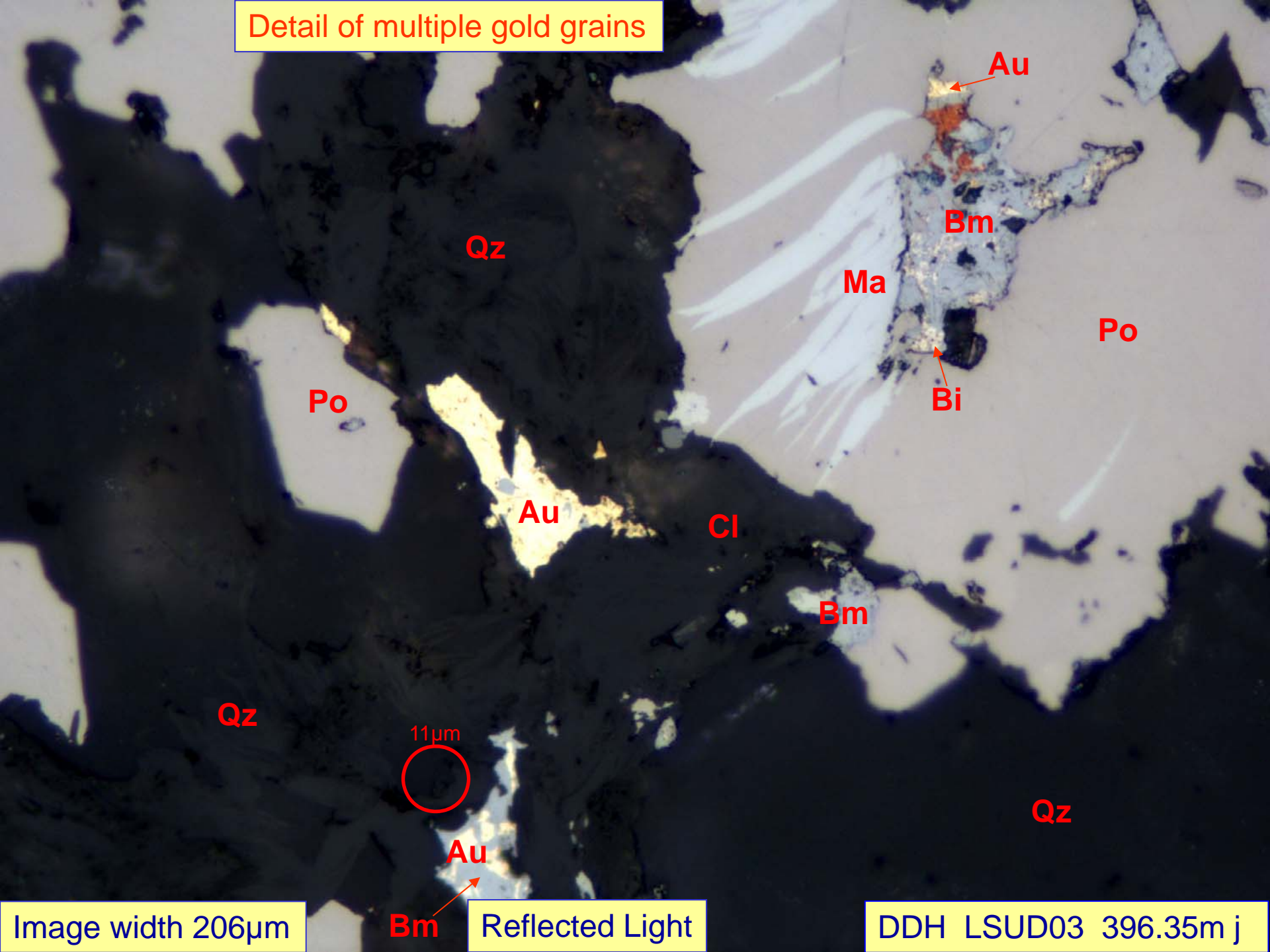


Image width 206µm

Reflected Light

DDH LSUD03 396.35m j

Cassiterite in pyrrhotite

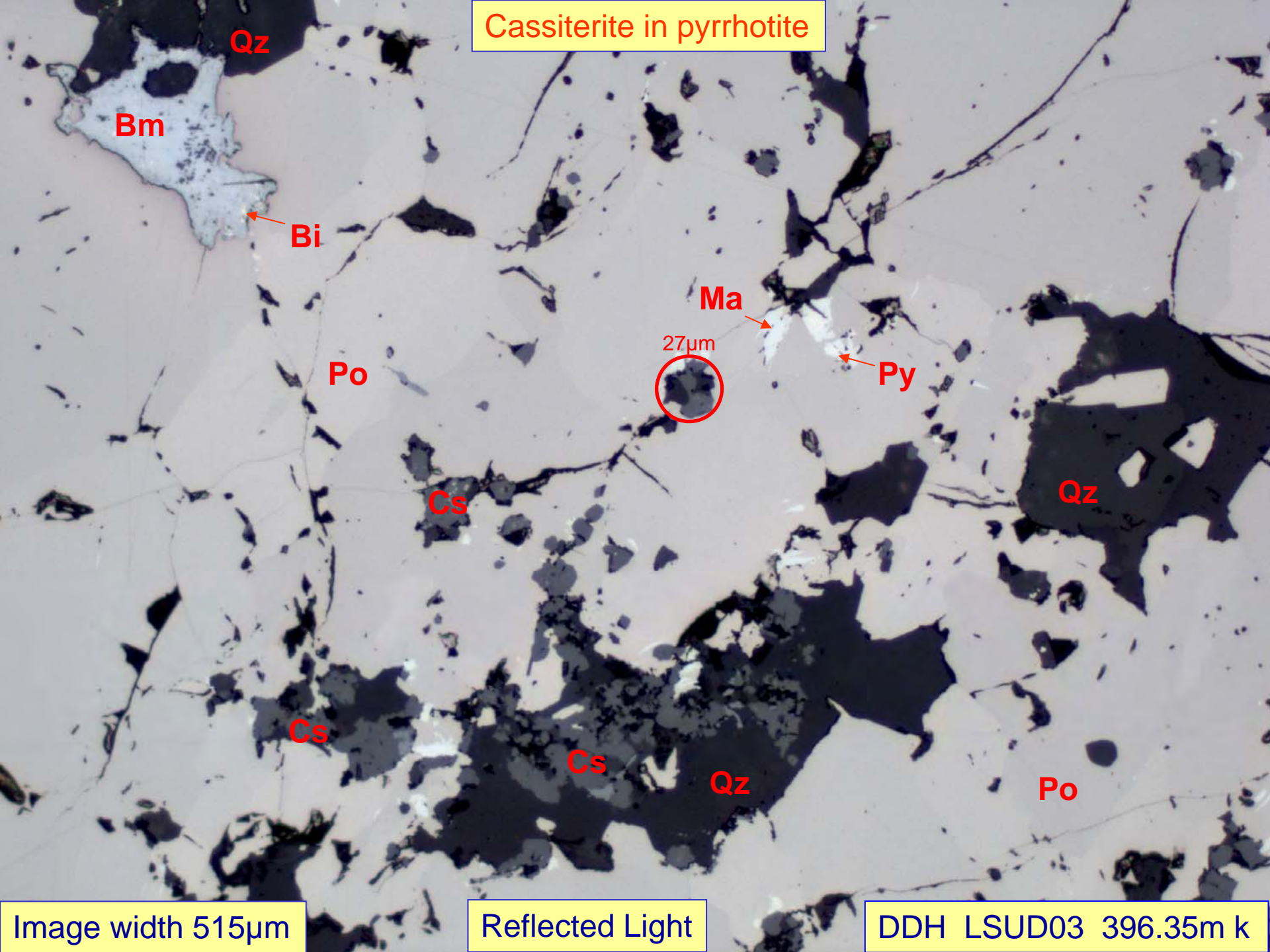


Image width 515µm

Reflected Light

DDH LSUD03 396.35m k

Offcut Assay

0.66%Cu, 0.81%Pb, 185ppmZn, 789ppmBi, 3.49%As, 3.62%Sn, 22.7%S, 1.69ppmAu



Unity Mining Ltd - Lakeside Drillcore Mineralogy

Sample DDH LSUD06A 218.85m

GJMcA 18.2.13

Total Scan Data - 530µm Mask

Average composition																			
	Cp	Sp	Gn	Cs	St	Bm	Bi	Py	Me	Ma	Po	As	Qz	Cl	Co	Mu	Ru	Cy	Other
Vol%	1.3	0.0	0.0	1.7	0.0	0.0	0.0	28.3	0.0	0.0	0.0	3.6	34.3	16.4	0.2	14.2	0.0	0.0	0.0
Wt%	1.5	0.0	0.0	3.3	0.0	0.0	0.0	39.9	0.0	0.0	0.0	6.2	25.3	12.2	0.2	11.3	0.0	0.0	0.0

ASSAYS										ppm
SG	%Cu	%Pb	%Zn	%As	%Sn	%Bi	%Fe	Au		
3.55	0.53	0.02	0.00	2.84	2.62	0.00	22.6			
Actual	0.66	0.81	0.02	3.49	3.62	0.08		1.69		

Mineral Abbreviations			
Cp	Chalcopyrite	Ma	Marcasite
Sp	Sphalerite	Po	Pyrrhotite
Gn	Galena	As	Arsenopyrite
Cs	Cassiterite	Qz	Quartz
St	Stannite	Cl	Chlorite
Bm	Bismuthinite	Co	Carbonate
Bi	Native Bismuth	Mu	Muscovite
Py	Pyrite	Ru	Rutile
Me	Melnikovite	Cy	Clay

Economic Mineral Scan Data - 53µm Mask

COMPOSITE PROPORTIONS							
	Cp	Sp	Gn	Cs	St	Bm	Bi
Mono	0	0	0	0	0	0	0
Binary	51	0	3	14	0	0	0
Ternary	25	0	56	57	0	0	0
Quat.y+	24	0	41	29	0	100	0

BINARY ASSOCIATION MATRIX													
	Cp	Sp	Gn	Cs	St	Bm	Bi	Py	Me	Ma	Po	As	Ga
Cp		0	0	0	0	0	0	17	0	0	0	0	34
Sp	0		0	0	0	0	0	0	0	0	0	0	0
Gn	0	0		0	0	0	0	3	0	0	0	0	0
Cs	0	0	0		0	0	0	1	0	0	0	0	14
St	0	0	0	0		0	0	0	0	0	0	0	0
Bm	0	0	0	0	0		0	0	0	0	0	0	0
Bi	0	0	0	0	0	0		0	0	0	0	0	0

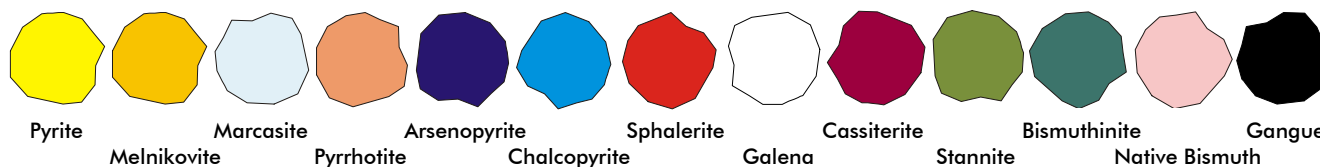
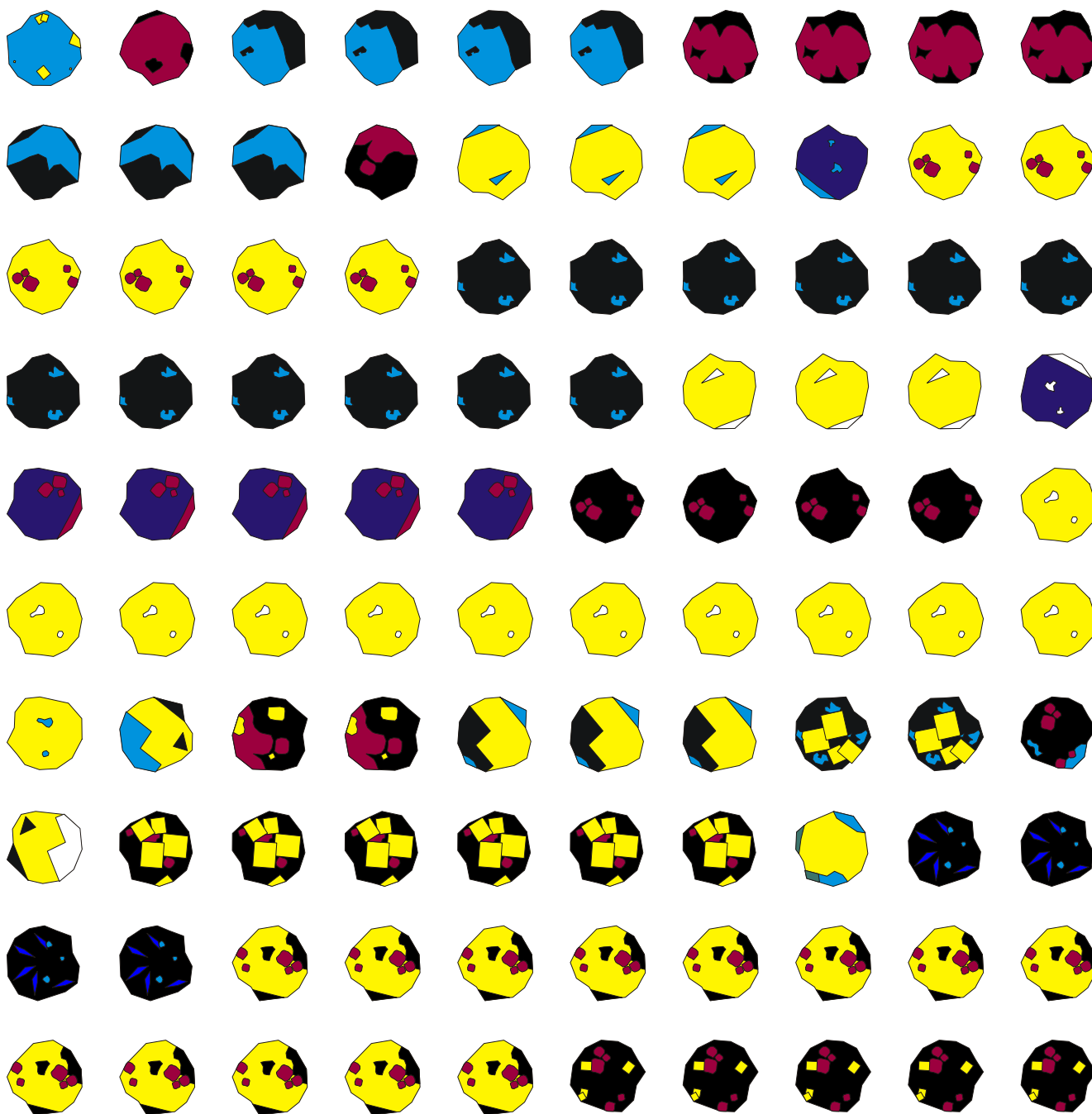
TOTAL ASSOCIATION MATRIX													
	Cp	Sp	Gn	Cs	St	Bm	Bi	Py	Me	Ma	Po	As	Ga
Cp		0	3	11	0	0	0	36	0	0	0	30	82
Sp	0		0	0	0	0	0	0	0	0	0	0	0
Gn	25	0		32	0	0	0	100	0	0	0	24	73
Cs	33	0	5		0	0	0	58	0	0	0	17	96
St	0	0	0	0		0	0	0	0	0	0	0	0
Bm	100	0	0	0	0		0	100	0	0	0	0	100
Bi	0	0	0	0	0	0		0	0	0	0	0	0

Unity Mining - Lakeside Drillcore Mineralogy

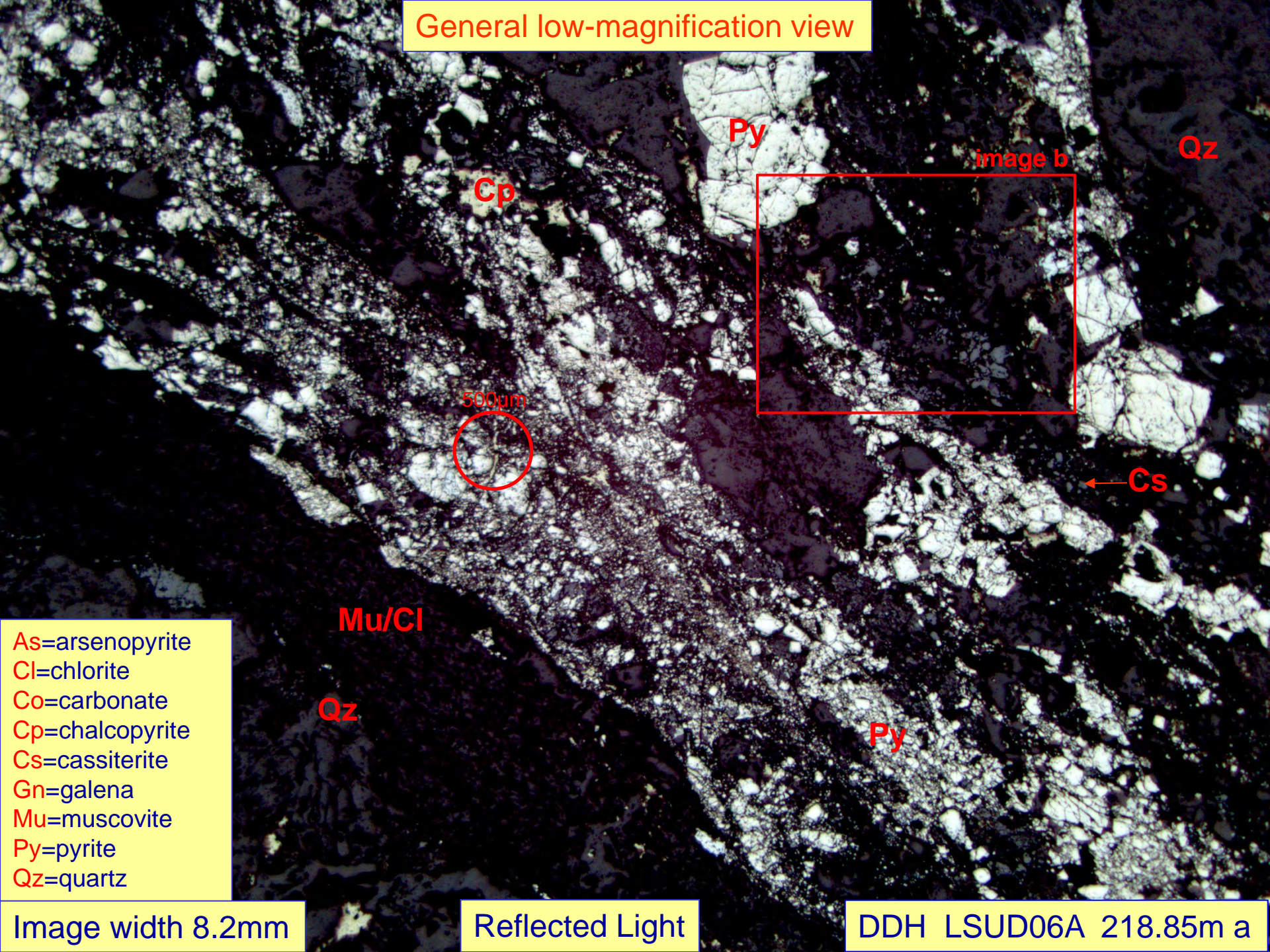
DDH LSUD06A 218.85m
Cu-Sn-Bi-Zn-Pb SCAN

53µm Mask

February 2013



General low-magnification view



Py

Qz

image b

Cp

500µm

Cs

Mu/Cl

Qz

Py

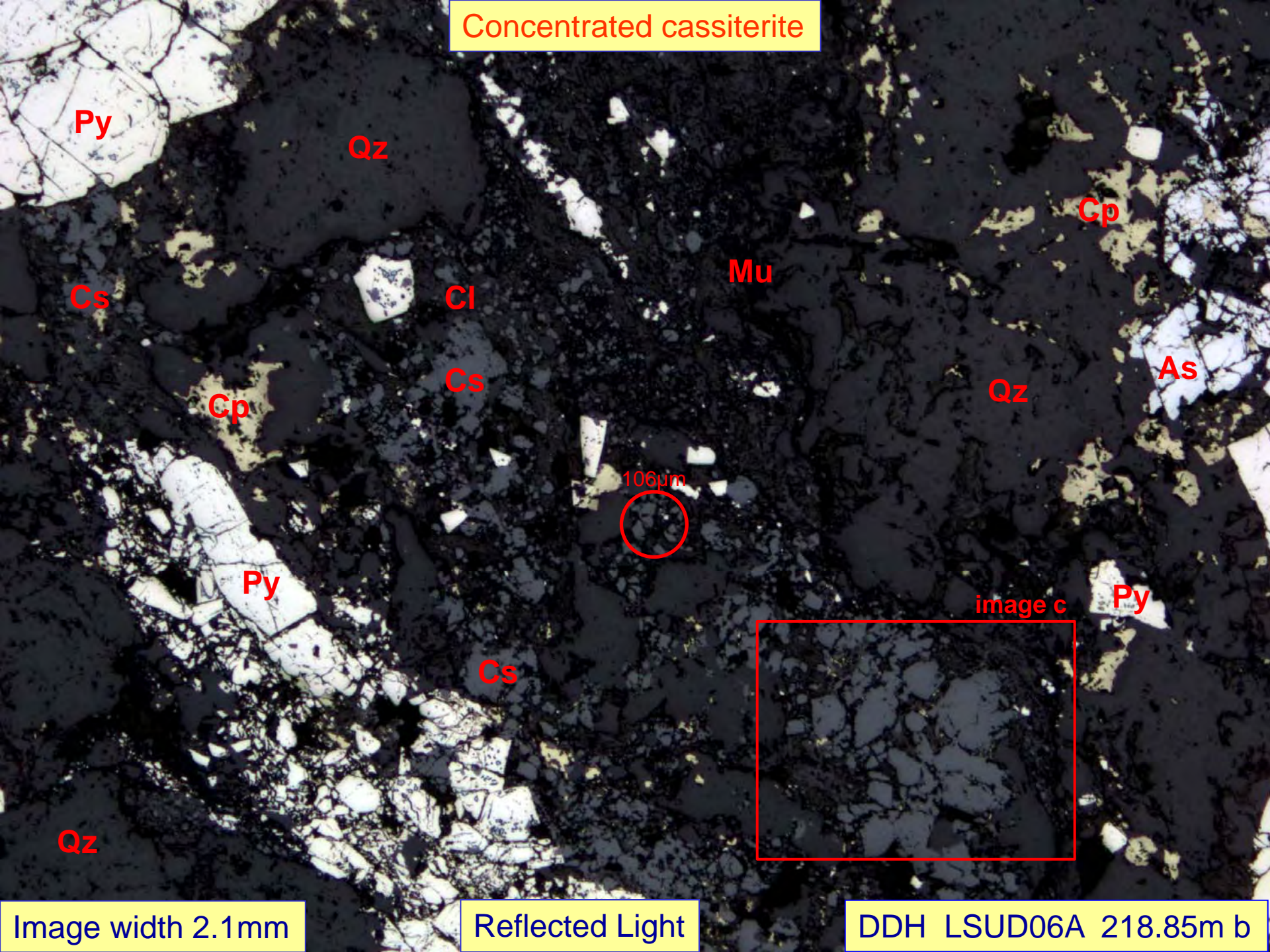
As=arsenopyrite
Cl=chlorite
Co=carbonate
Cp=chalcopyrite
Cs=cassiterite
Gn=galena
Mu=muscovite
Py=pyrite
Qz=quartz

Image width 8.2mm

Reflected Light

DDH LSUD06A 218.85m a

Concentrated cassiterite



Py

Qz

Cs

Cl

Mu

Cp

As

Qz

Cp

Cs

106µm

Py

Cs

image c

Py

Qz

Image width 2.1mm

Reflected Light

DDH LSUD06A 218.85m b

Detail from previous image

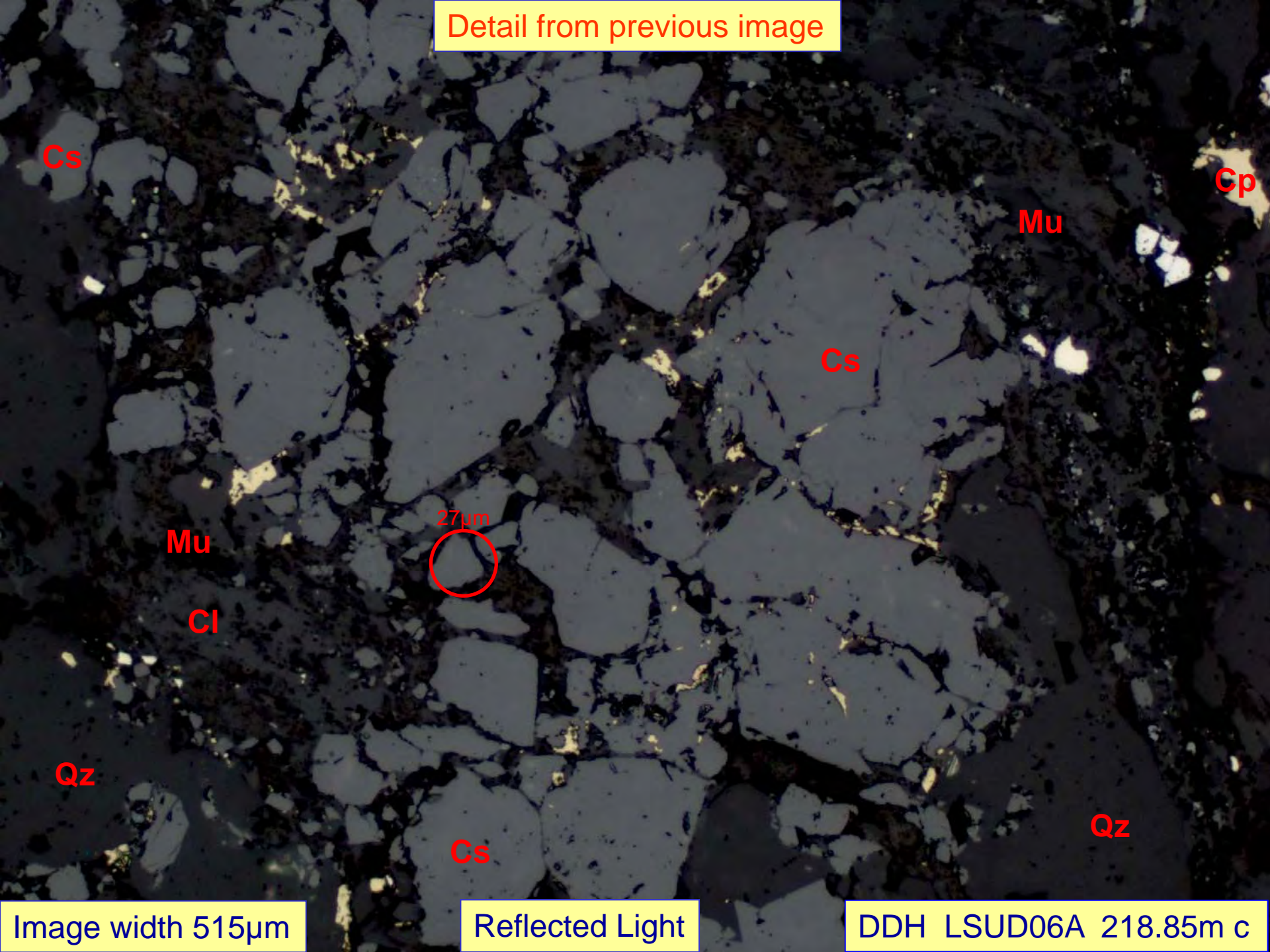
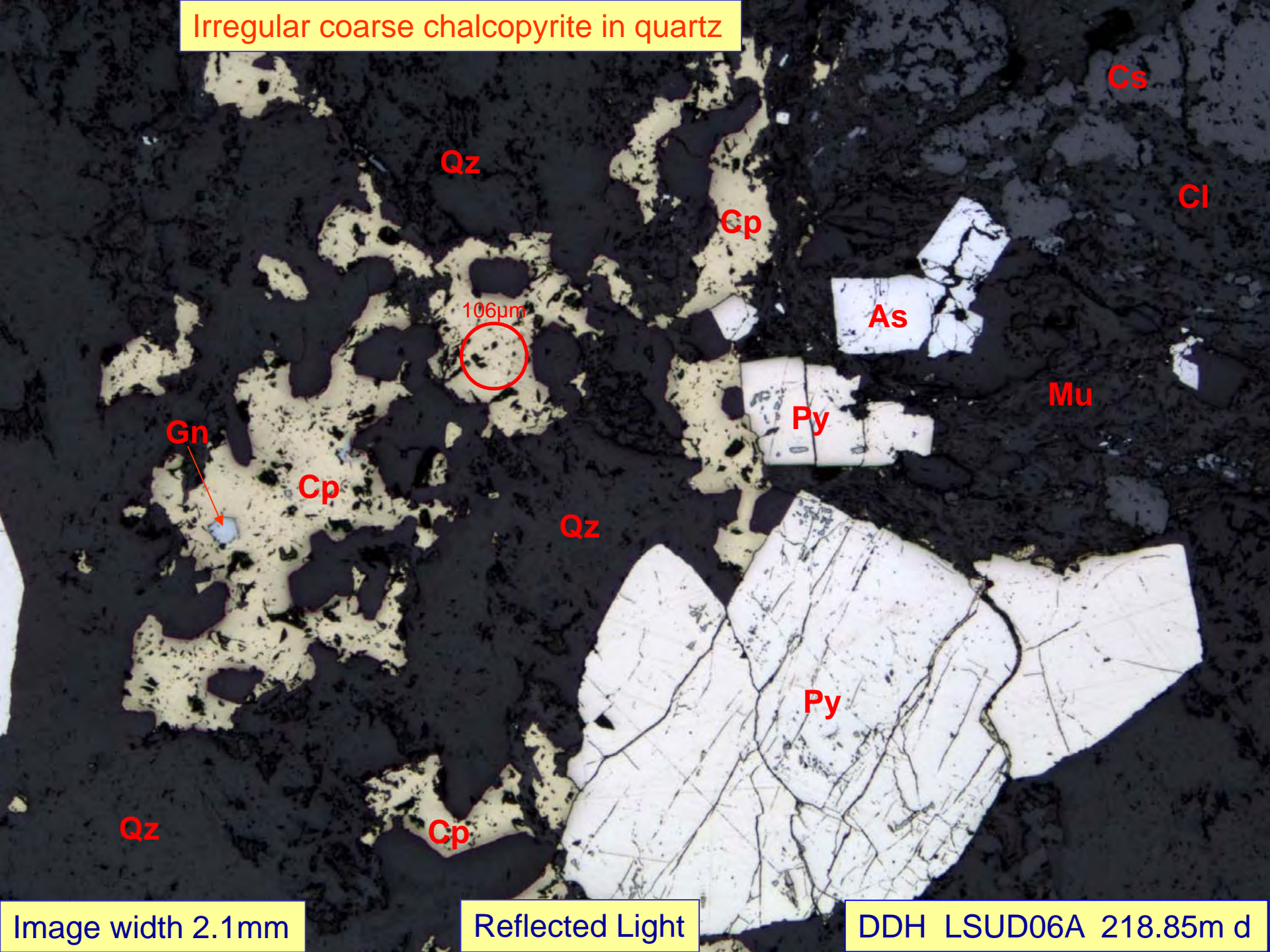


Image width 515µm

Reflected Light

DDH LSUD06A 218.85m c

Irregular coarse chalcopyrite in quartz



Cs

Cl

Qz

Cp

106µm

As

Mu

Py

Gn

Cp

Qz

Py

Qz

Cp

Image width 2.1mm

Reflected Light

DDH LSUD06A 218.85m d

Cassiterite with arsenopyrite

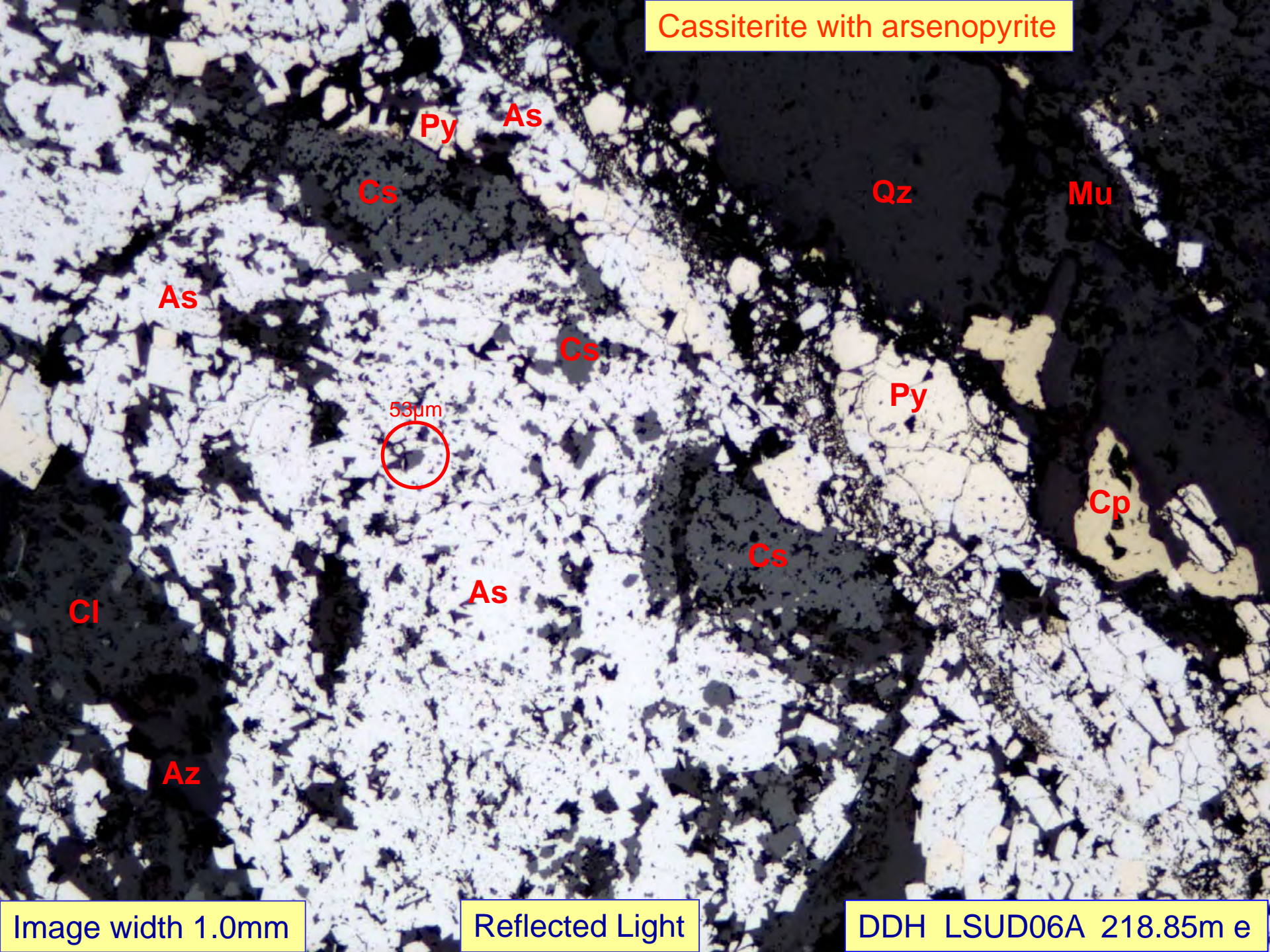


Image width 1.0mm

Reflected Light

DDH LSUD06A 218.85m e

Coarse cassiterite, chalcopyrite and galena

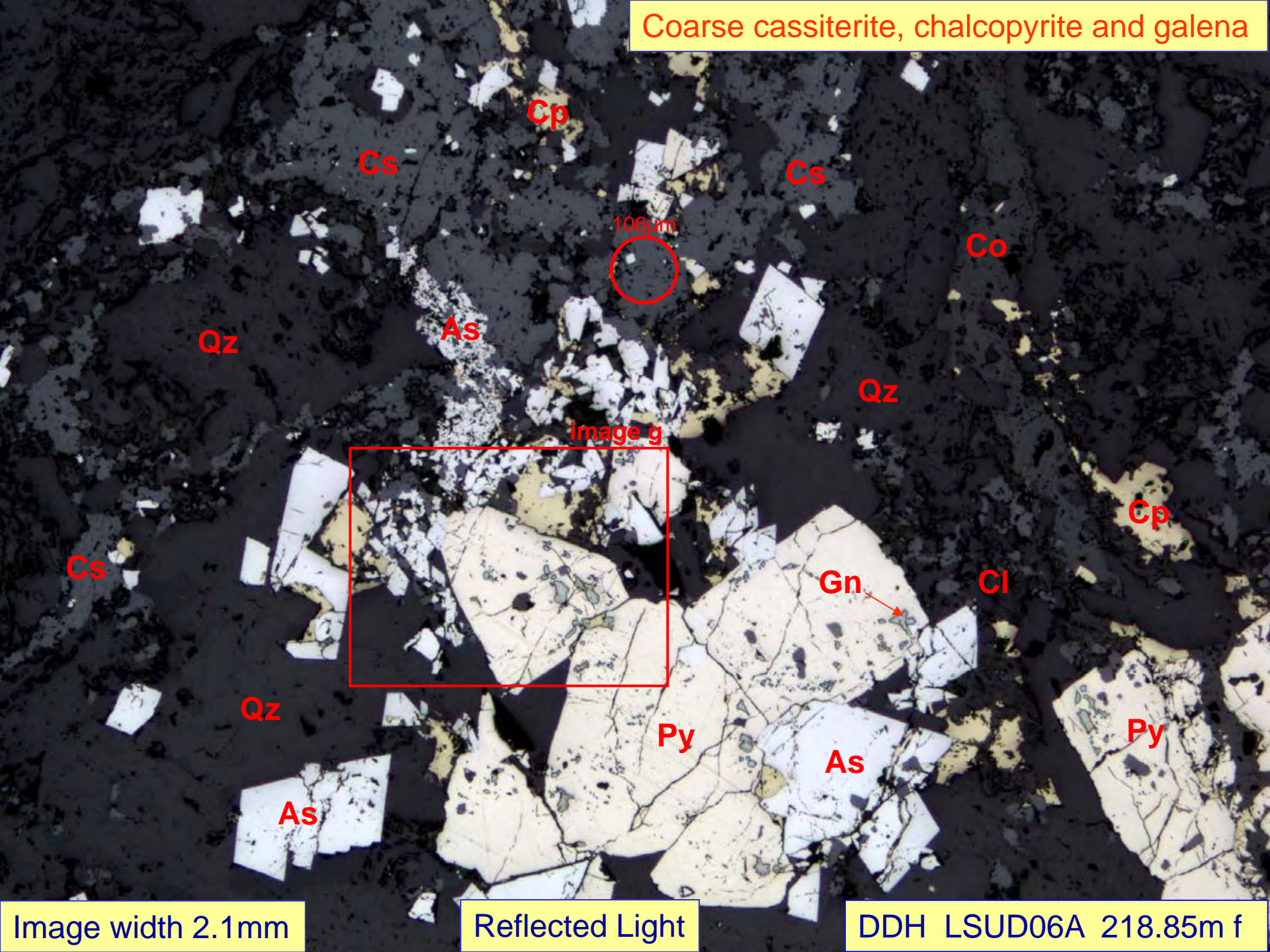


Image width 2.1mm

Reflected Light

DDH LSUD06A 218.85m f

Detail from previous image

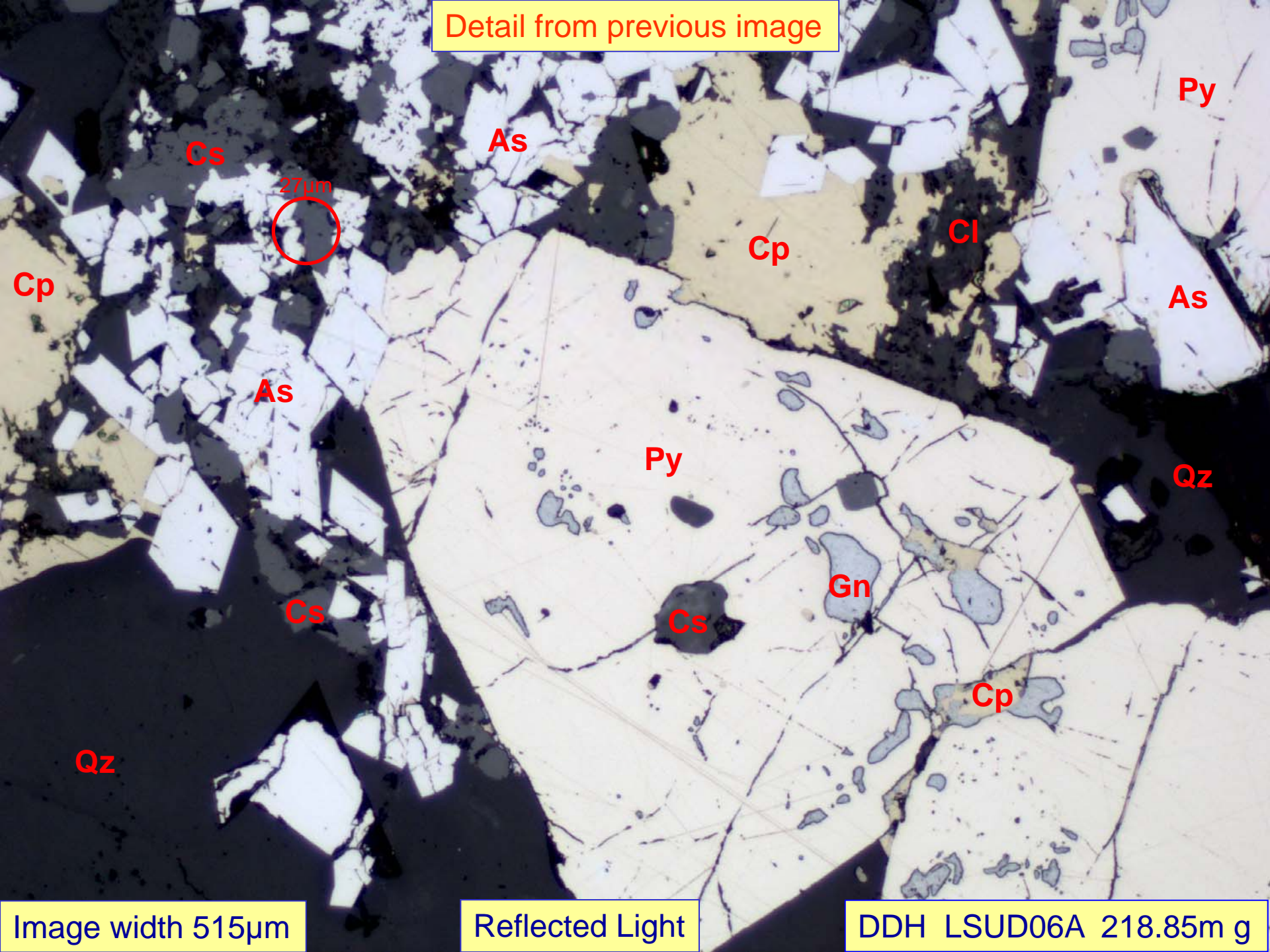


Image width 515µm

Reflected Light

DDH LSUD06A 218.85m g

Pyrite-arsenopyrite-cassiterite

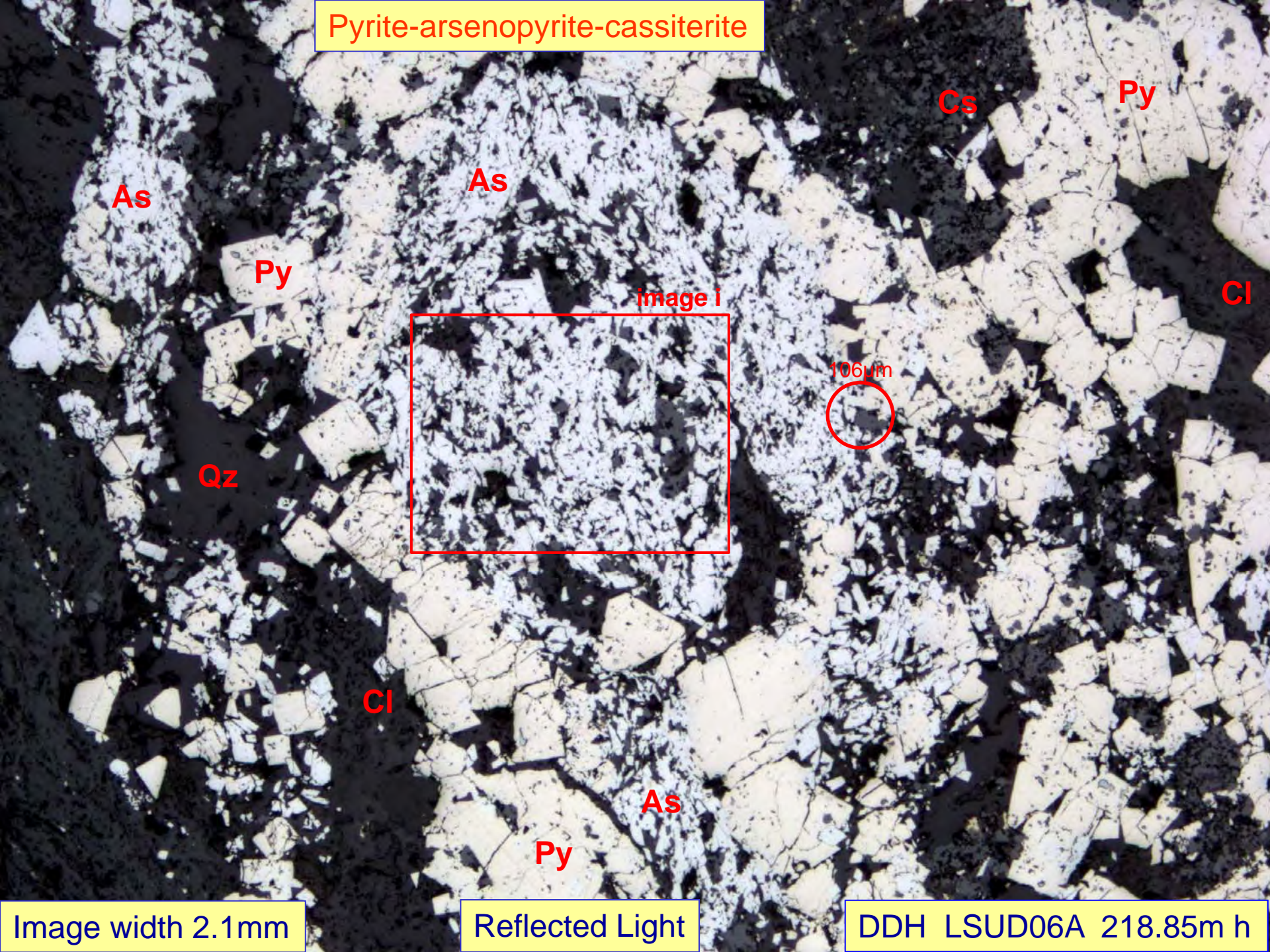


Image width 2.1mm

Reflected Light

DDH LSUD06A 218.85m h

Detail from previous image

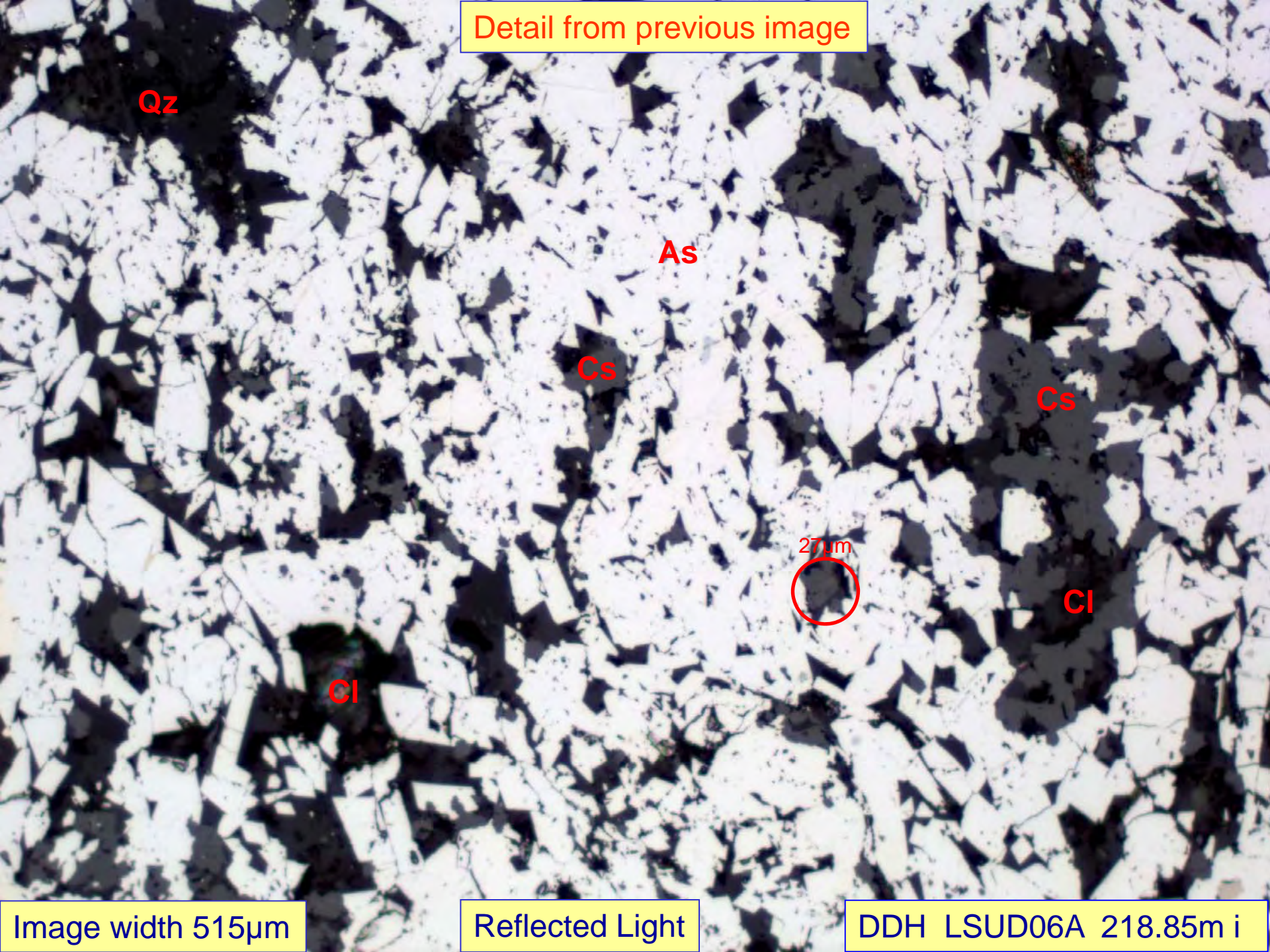


Image width 515µm

Reflected Light

DDH LSUD06A 218.85m i

Cataclasised pyrite in microfault

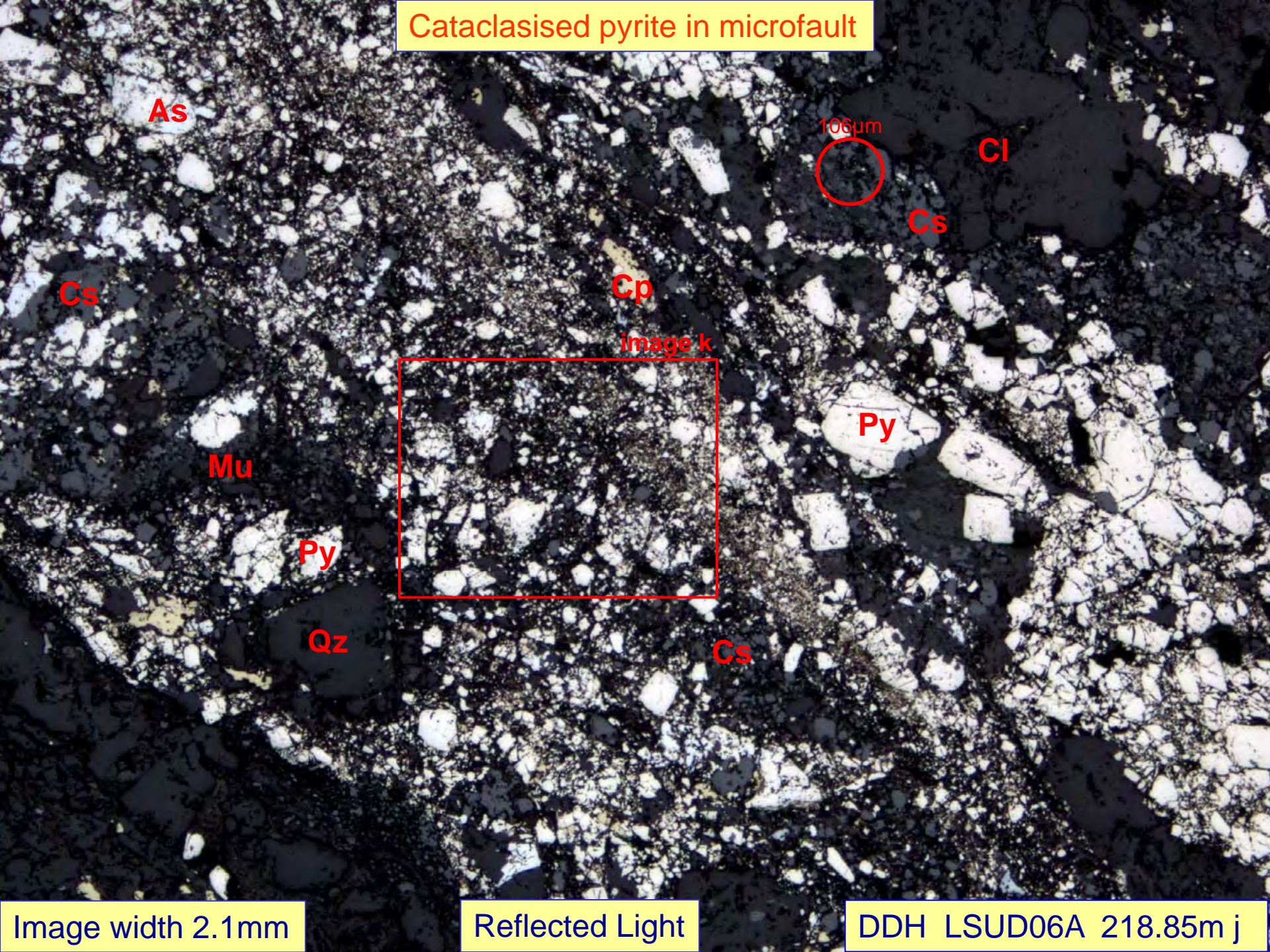


Image width 2.1mm

Reflected Light

DDH LSUD06A 218.85m j

Detail from previous image

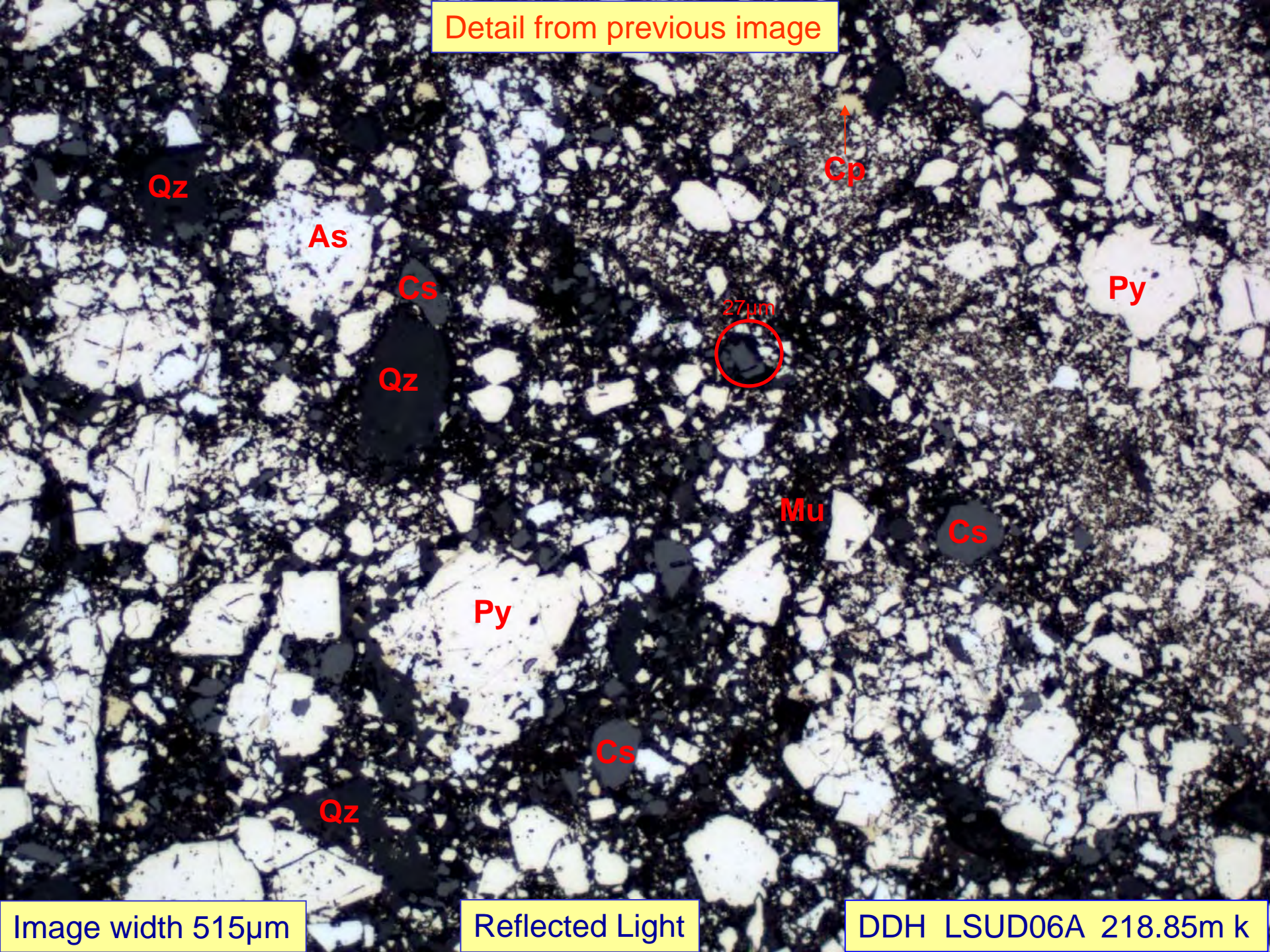
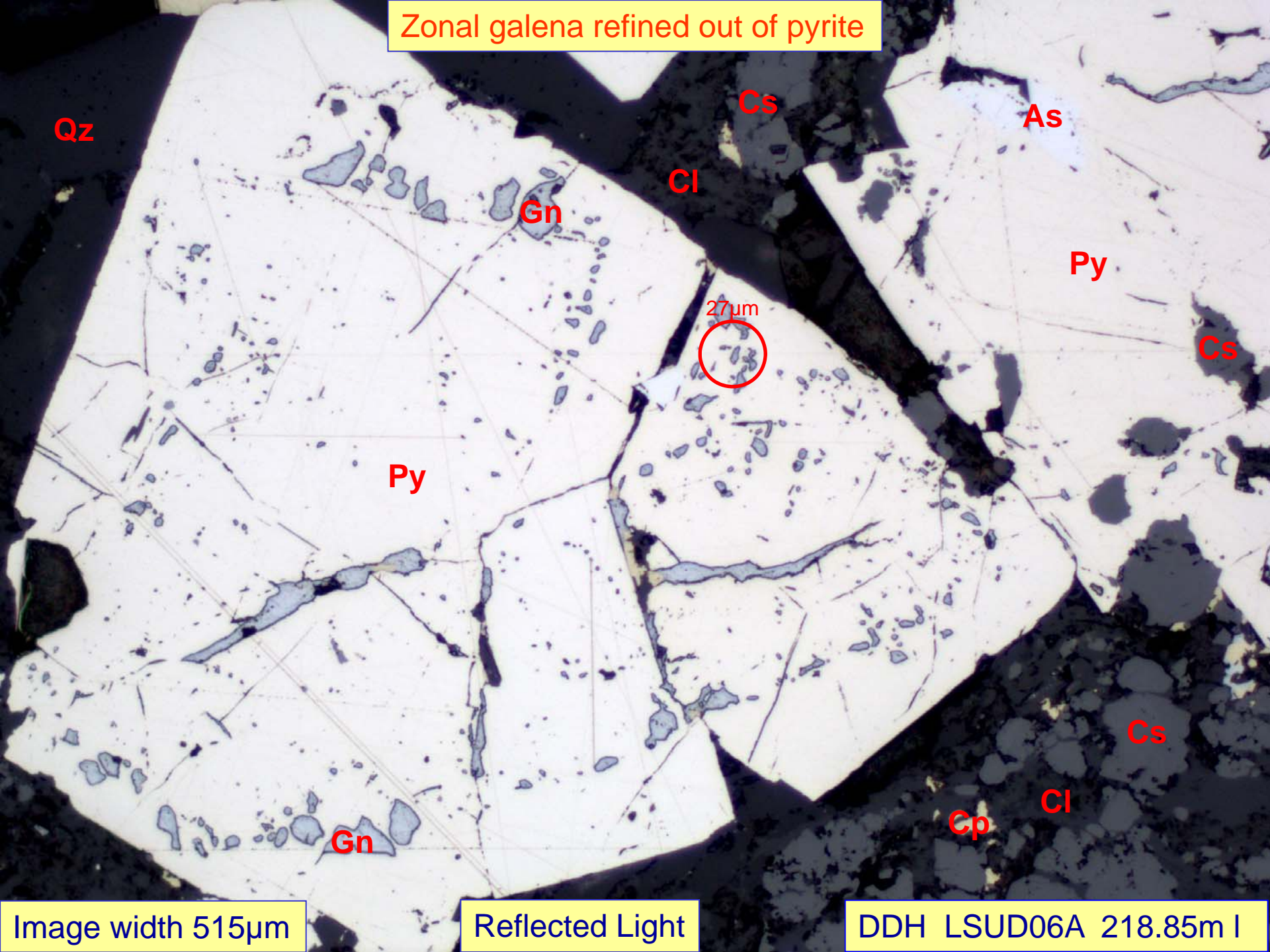


Image width 515µm

Reflected Light

DDH LSUD06A 218.85m k

Zonal galena refined out of pyrite



Qz

Cs

As

Cl

Gn

Py

Cs

27µm

Py

Cs

Cl

Cp

Gn

Image width 515µm

Reflected Light

DDH LSUD06A 218.85m I

Sample Scan

Offcut Assay

0.70%Cu, 0.15%Pb, 497ppmZn, 166ppmBi, >10.0%As, 0.16%Sn, 28.1%S, 11ppmAu



Image width ~155mm

DDH LSUD06A 218.95m

Unity Mining Ltd - Lakeside Drillcore Mineralogy
Sample DDH LSUD06A 218.95m

GJMcA 18.2.13

Total Scan Data - 530µm Mask

Average composition																			
	Cp	Sp	Gn	Cs	St	Bm	Bi	Py	Me	Ma	Po	As	Qz	Cl	Co	Mu	Ru	Cy	Other
Vol%	2.3	0.0	0.0	0.0	0.0	0.0	0.0	46.3	0.0	0.0	0.0	34.7	16.1	0.2	0.0	0.4	0.0	0.0	0.0
Wt%	1.9	0.0	0.0	0.0	0.0	0.0	0.0	46.8	0.0	0.0	0.0	42.5	8.5	0.1	0.0	0.2	0.0	0.0	0.0
Mineral Abbreviations																			
Cp Chalcopyrite Ma Marcasite																			
Sp Sphalerite Po Pyrrhotite																			
Gn Galena As Arsenopyrite																			
Cs Cassiterite Qz Quartz																			
St Stannite Cl Chlorite																			
Bm Bismuthinite Co Carbonate																			
Bi Native Bismuth Mu Muscovite																			
Py Pyrite Ru Rutile																			
Me Melnikovite Cy Clay																			
ASSAYS ppm																			
	SG	%Cu	%Pb	%Zn	%As	%Sn	%Bi	%Fe	Au										
Calc'd	4.96	0.67	0.00	0.00	19.5	0.00	0.00	36.9											
Actual		0.70	0.15	0.05	>10	0.16	0.02		11.0										

Economic Mineral Scan Data - 53µm Mask

COMPOSITE PROPORTIONS

	Cp	Sp	Gn	Cs	St	Bm	Bi
Mono	8	0	0	0	0	0	0
Binary	28	14	26	0	0	0	0
Ternary	41	64	47	0	60	0	0
Quat.y+	23	21	26	100	40	0	0

BINARY ASSOCIATION MATRIX

	Cp	Sp	Gn	Cs	St	Bm	Bi	Py	Me	Ma	Po	As	Ga
Cp		0	0	0	0	0	0	11	0	0	0	0	17
Sp	0		0	0	0	0	0	14	0	0	0	0	0
Gn	0	0		0	0	0	0	26	0	0	0	0	0
Cs	0	0	0		0	0	0	0	0	0	0	0	0
St	0	0	0	0		0	0	0	0	0	0	0	0
Bm	0	0	0	0	0		0	0	0	0	0	0	0
Bi	0	0	0	0	0	0		0	0	0	0	0	0

TOTAL ASSOCIATION MATRIX

	Cp	Sp	Gn	Cs	St	Bm	Bi	Py	Me	Ma	Po	As	Ga
Cp		0	0	5	10	0	0	47	0	0	0	42	68
Sp	29		0	0	14	0	0	50	0	0	0	57	57
Gn	16	0		0	0	0	0	63	0	0	0	58	63
Cs	100	0	0		0	0	0	87	0	0	0	12	100
St	100	20	0	0		0	0	100	0	0	0	20	0
Bm	0	0	0	0	0		0	0	0	0	0	0	0
Bi	0	0	0	0	0	0		0	0	0	0	0	0

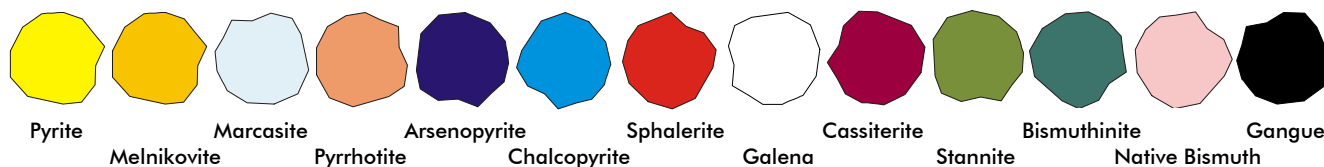
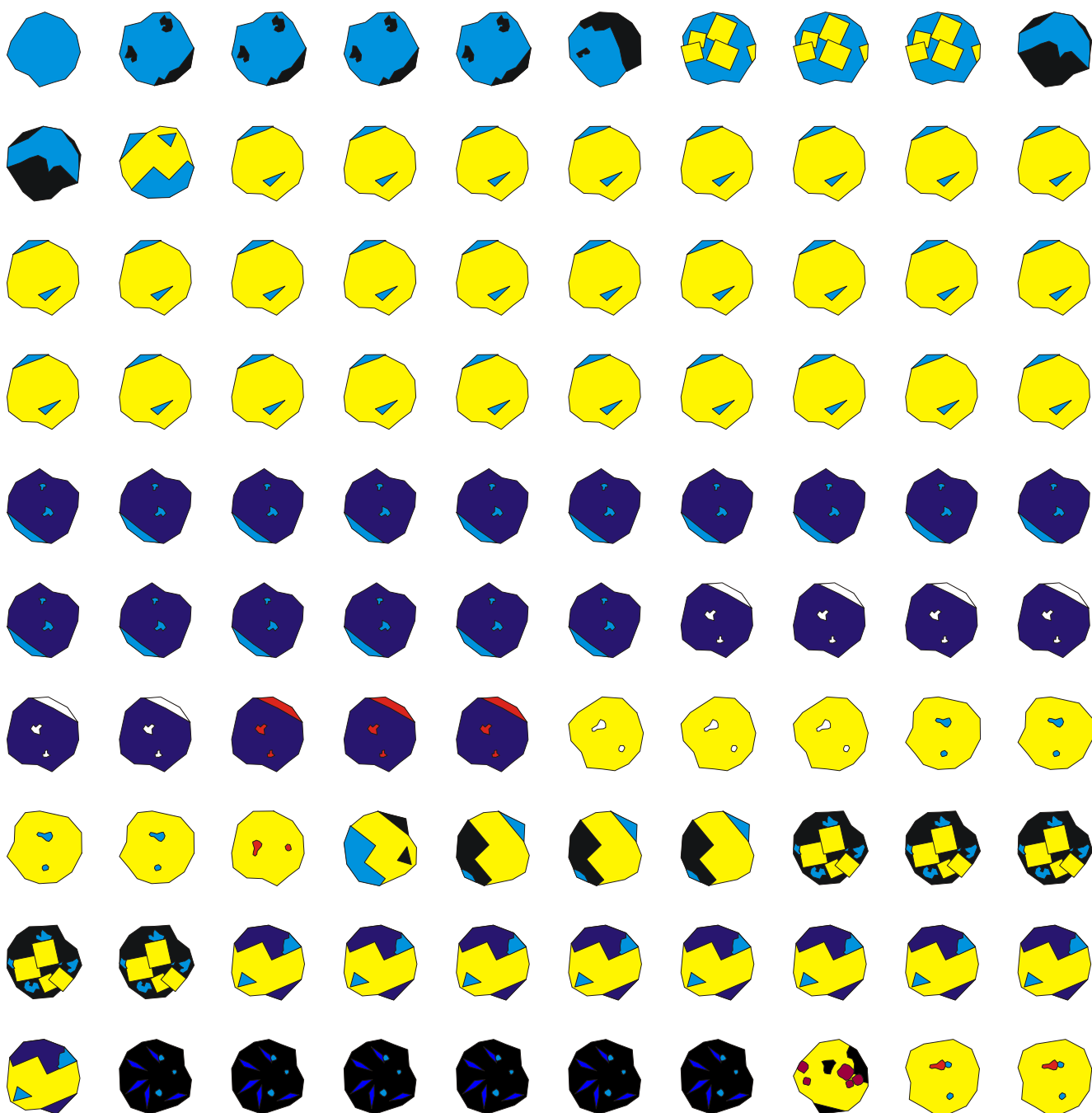
of all

Unity Mining - Lakeside Drillcore Mineralogy

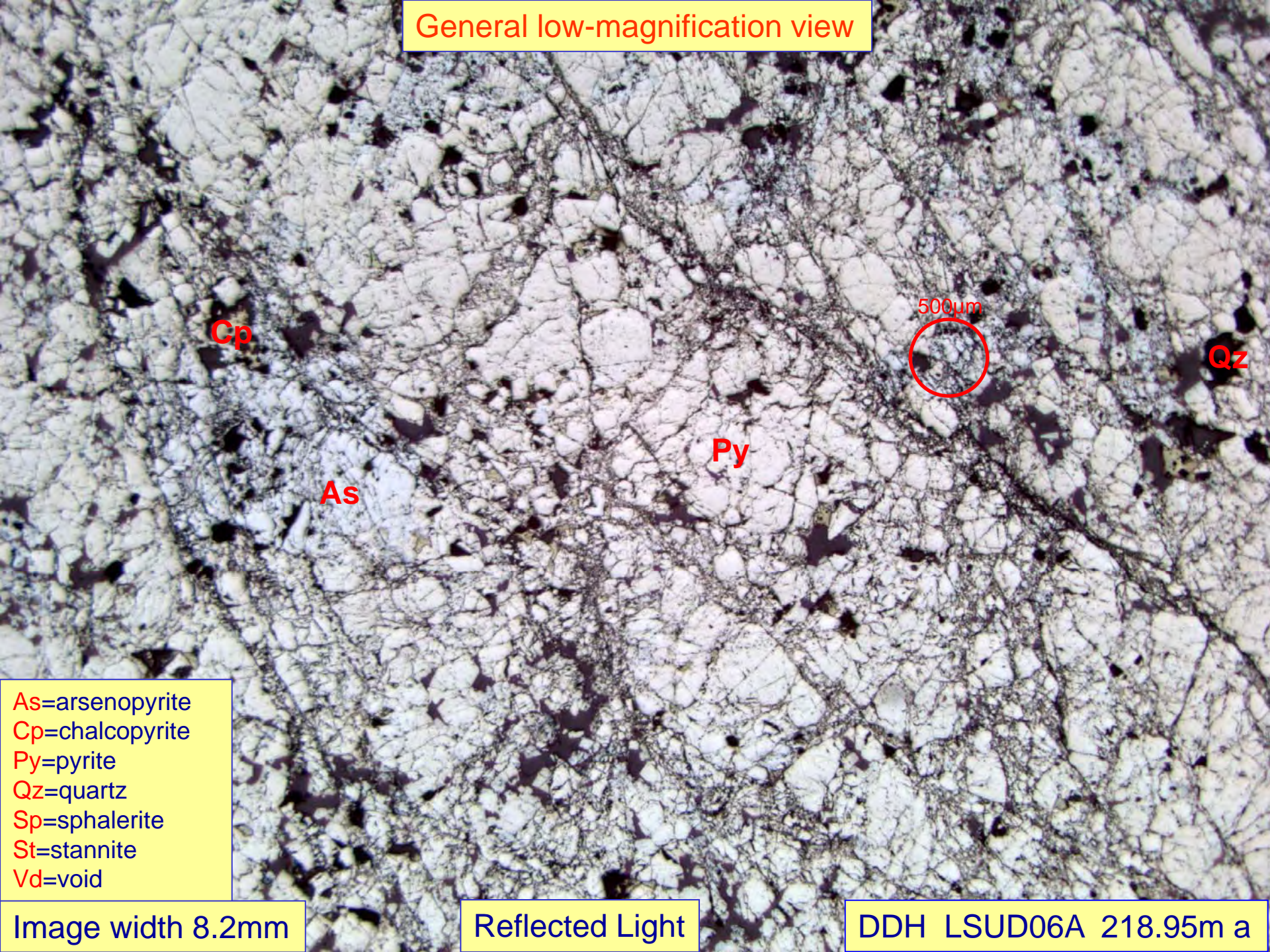
DDH LSUD06A 218.95m
Cu-Sn-Bi-Zn-Pb SCAN

53µm Mask

February 2013



General low-magnification view



Cp

As

Py

500µm

Qz

As=arsenopyrite
Cp=chalcopyrite
Py=pyrite
Qz=quartz
Sp=sphalerite
St=stannite
Vd=void

Image width 8.2mm

Reflected Light

DDH LSUD06A 218.95m a

Microfault cataclasis; interstitial quartz-chalcopyrite

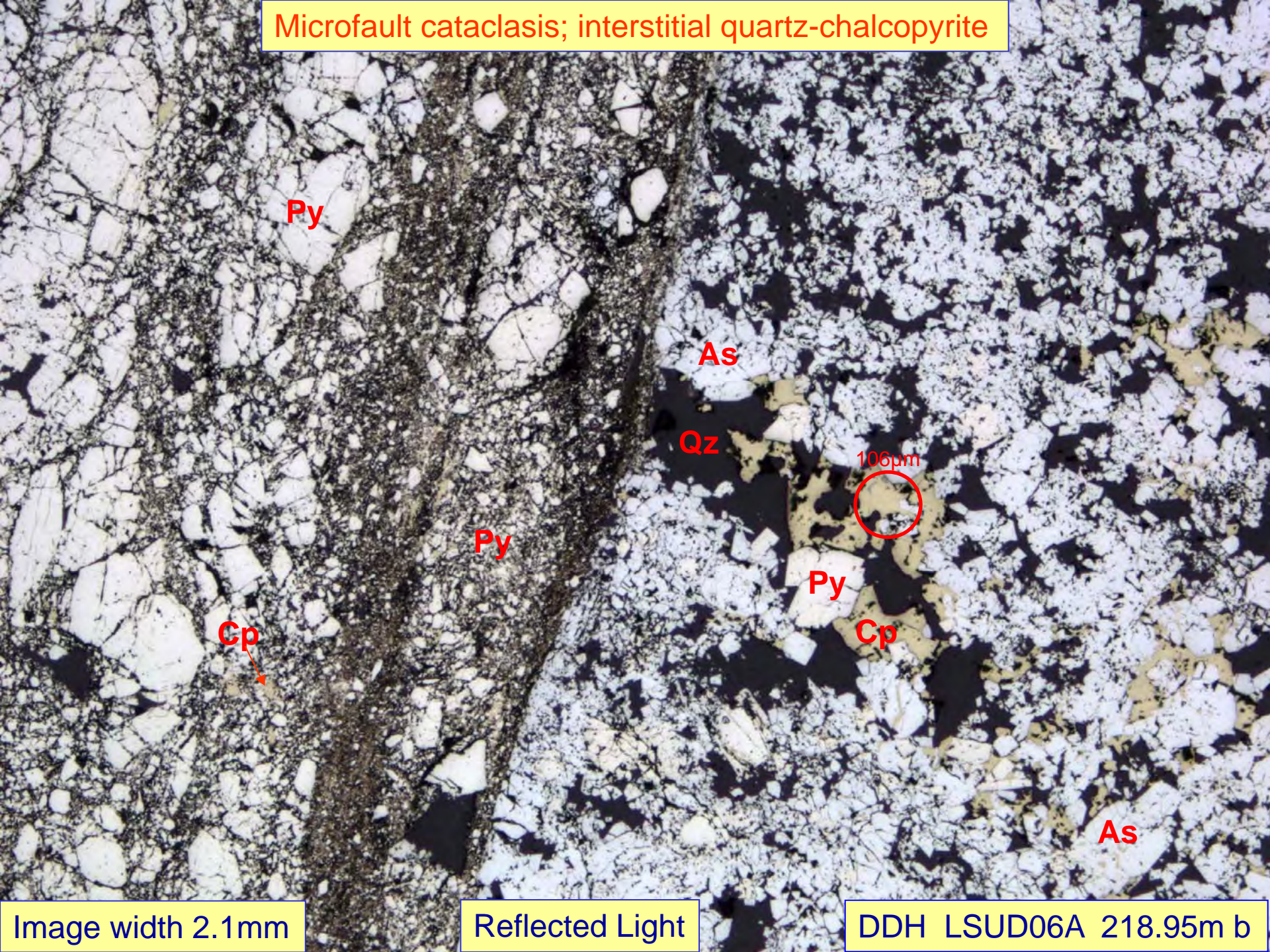


Image width 2.1mm

Reflected Light

DDH LSUD06A 218.95m b

Arsenopyrite-pyrite-quartz

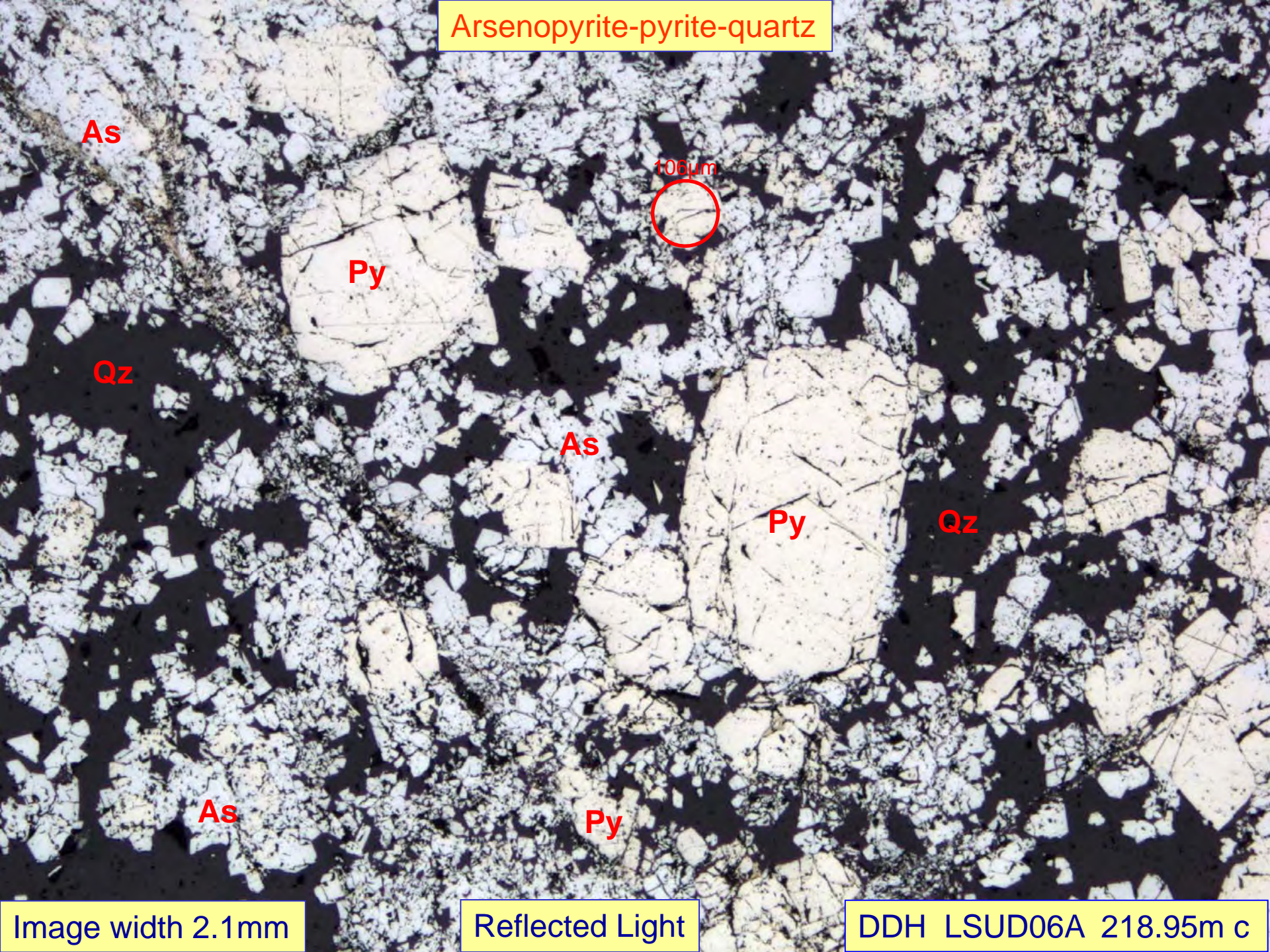


Image width 2.1mm

Reflected Light

DDH LSUD06A 218.95m c

Microfault intersection— extreme cataclasis

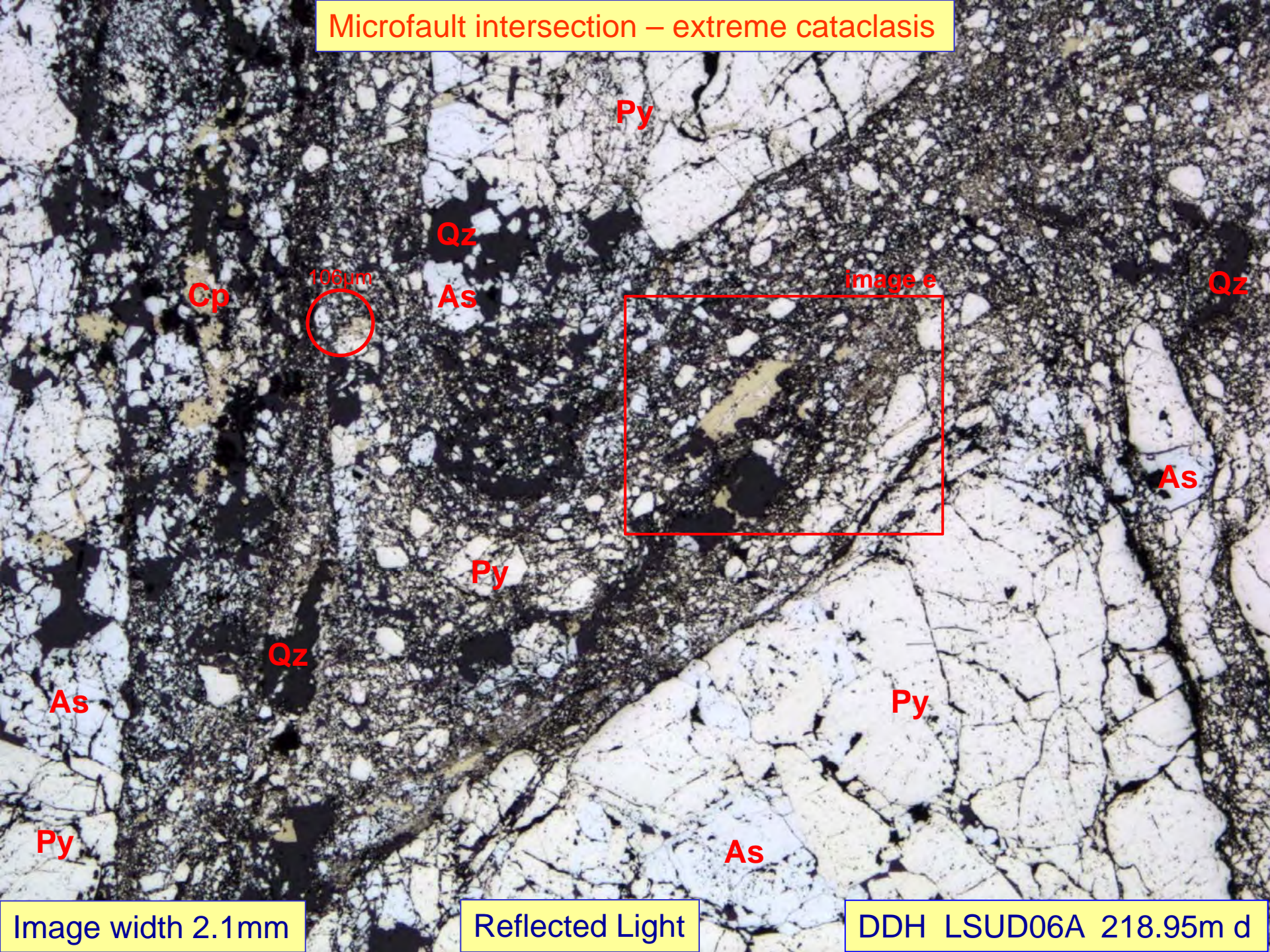


Image width 2.1mm

Reflected Light

DDH LSUD06A 218.95m d

Detail from previous image

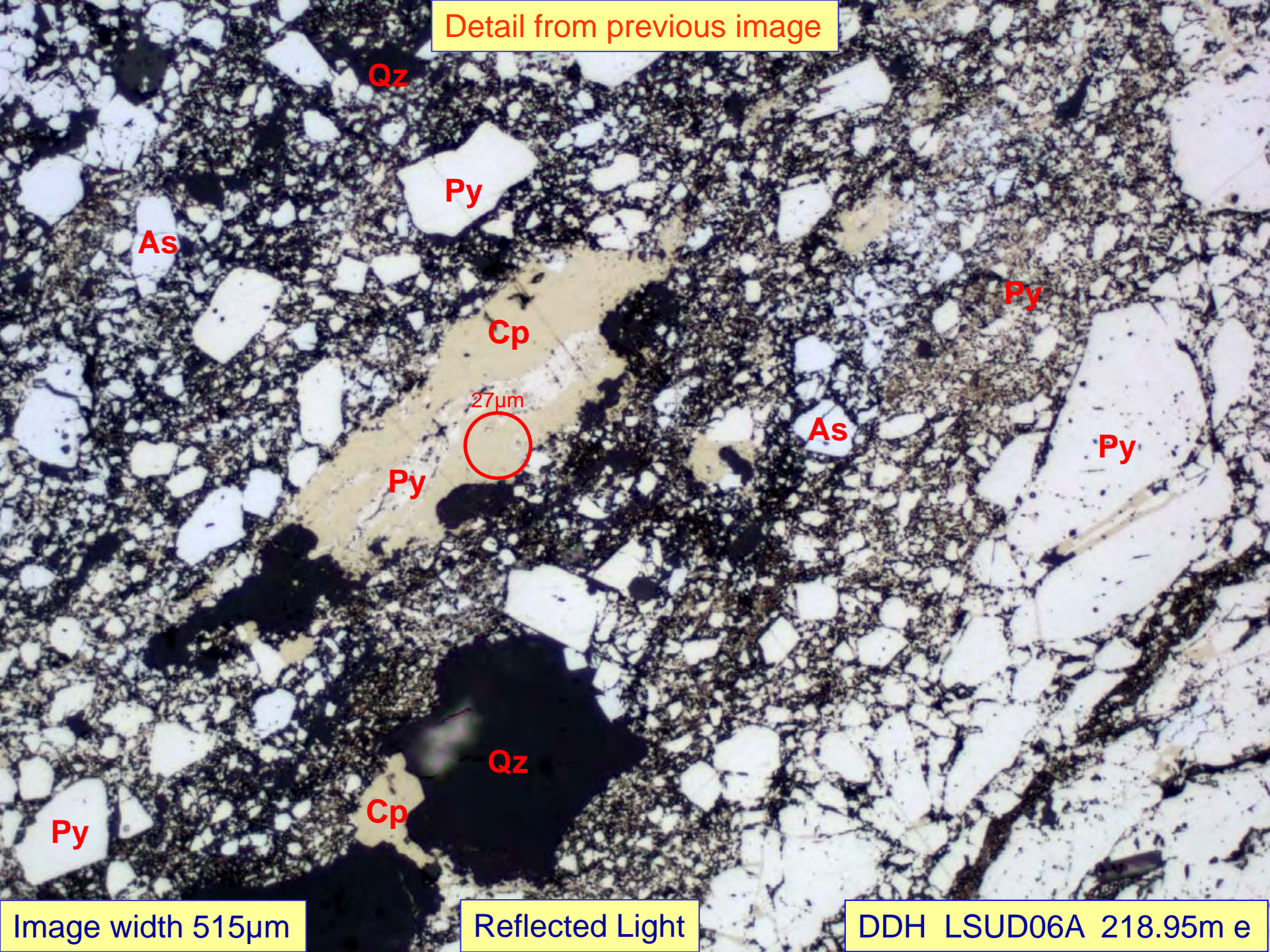


Image width 515µm

Reflected Light

DDH LSUD06A 218.95m e

Late vughy chalcopyrite-quartz

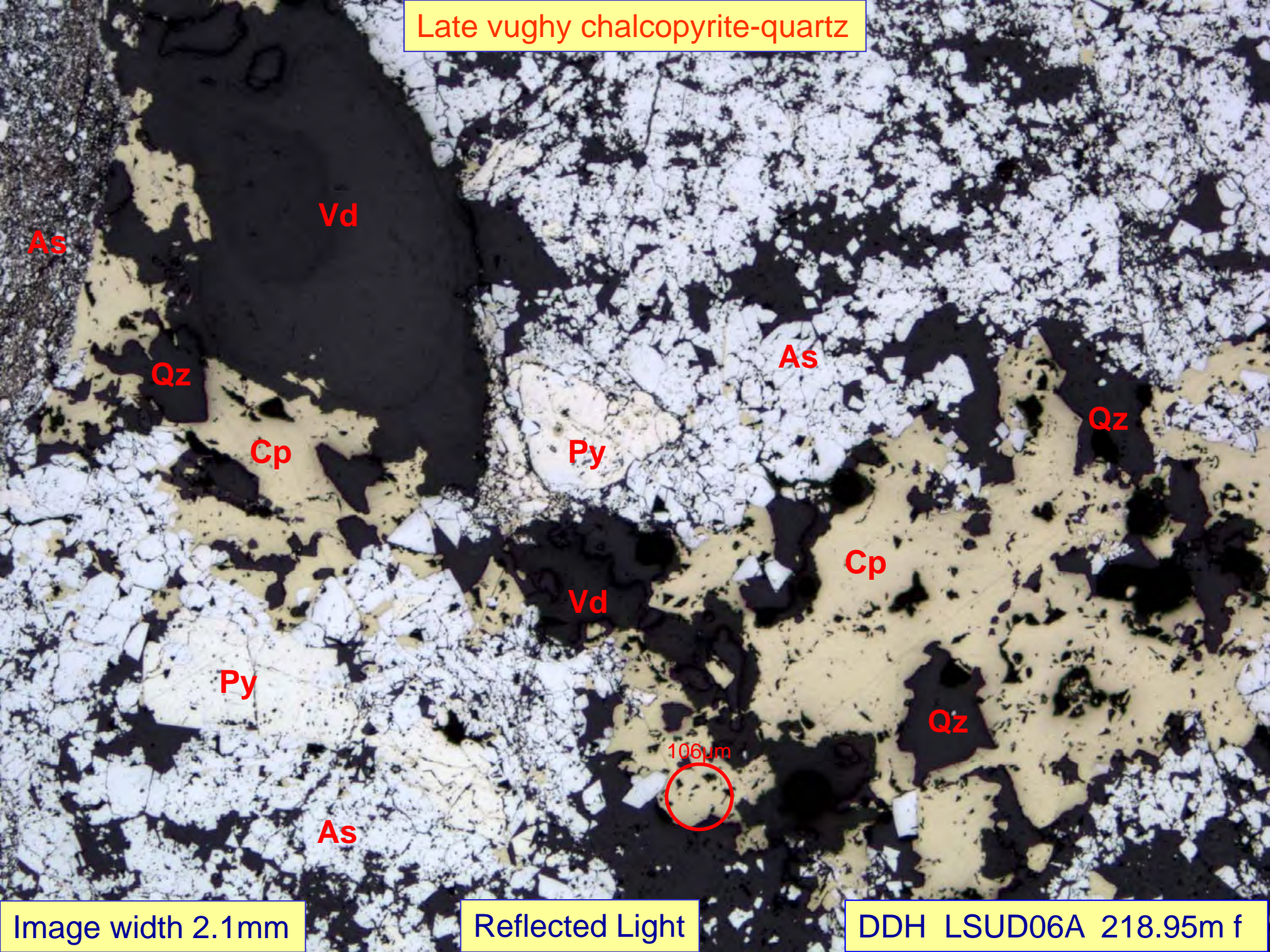


Image width 2.1mm

Reflected Light

DDH LSUD06A 218.95m f

Py

Rare stannite in chalcopyrite

Qz

Qz

As

27 μ m

Cp

As

St

St

Qz

As

Image width 515 μ m

Reflected Light

DDH LSUD06A 218.95m g

Interstitial chalcopyrite-sphalerite

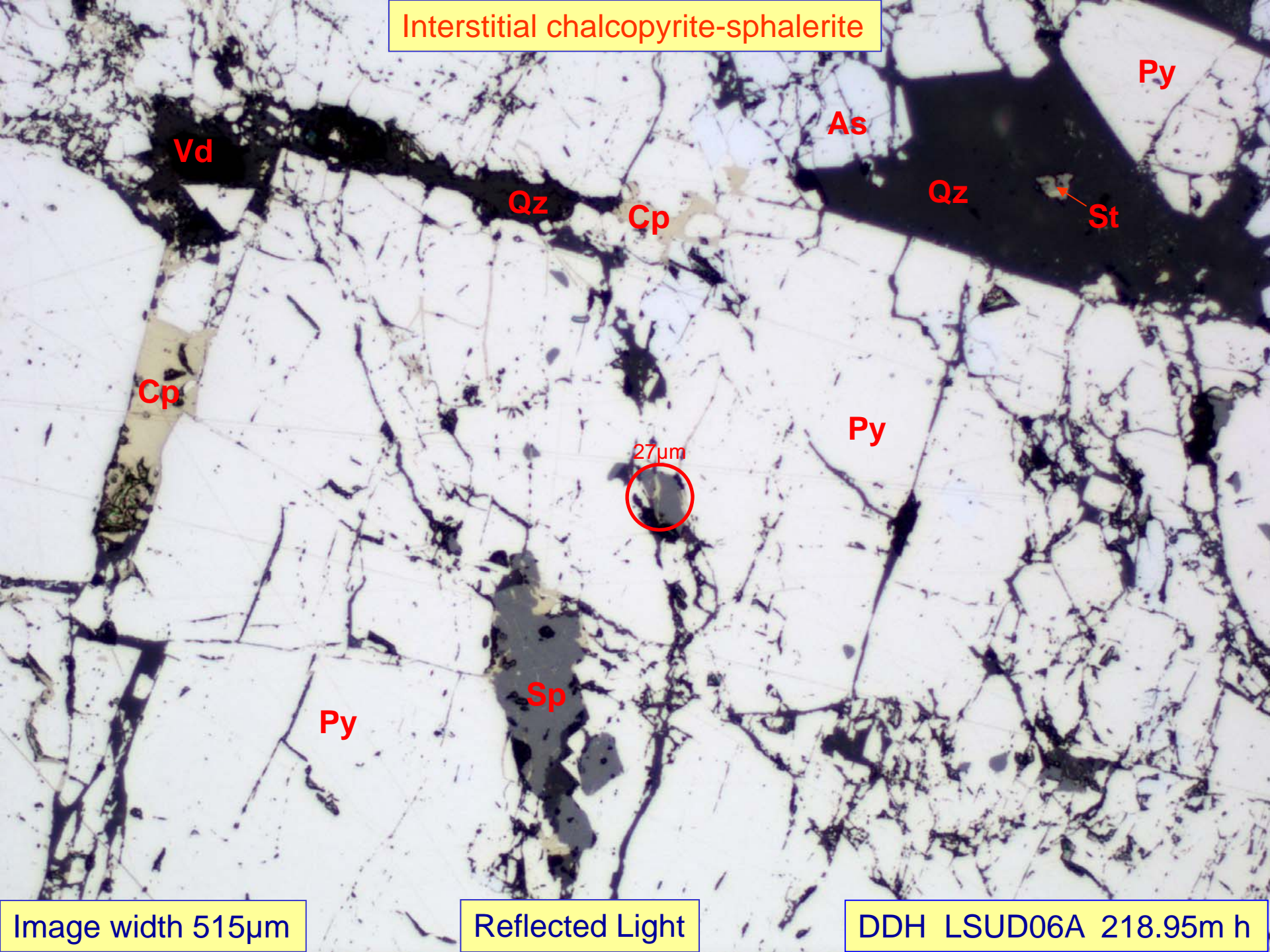
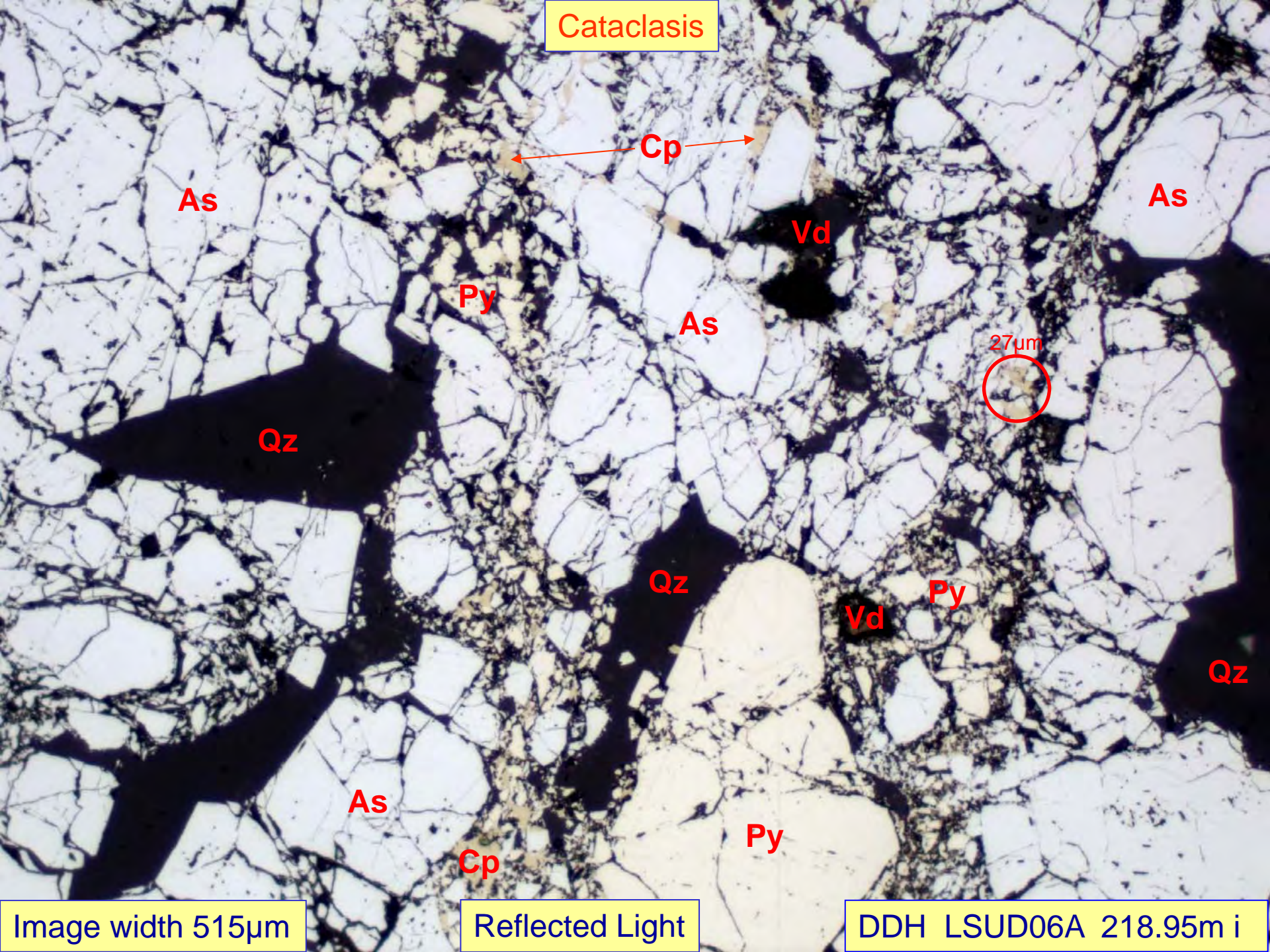


Image width 515µm

Reflected Light

DDH LSUD06A 218.95m h



Cataclasis

As

Cp

Vd

As

Py

As

27µm

Qz

Qz

Py

Vd

Qz

As

Py

Cp

Image width 515µm

Reflected Light

DDH LSUD06A 218.95m i

Offcut Assay

0.43%Cu, 0.17%Pb, 597ppmZn, 298ppmBi, >10.0%As, 0.99%Sn, 14.5%S, 7.01ppmAu



Unity Mining Ltd - Lakeside Drillcore Mineralogy

Sample DDH LSUD06A 219.2m

GJMcA 19.2.13

Total Scan Data - 530µm Mask

		Average composition																		
		Cp	Sp	Gn	Cs	St	Bm	Bi	Py	Me	Ma	Po	As	Qz	Cl	Co	Mu	Ru	Cy	Other
Vol%		1.7	0.0	0.0	0.0	0.1	0.0	0.0	31.8	3.4	0.0	0.0	30.7	29.7	0.1	0.3	2.1	0.0	0.0	0.0
Wt%		1.6	0.0	0.0	0.0	0.1	0.0	0.0	35.0	3.8	0.0	0.0	40.9	17.1	0.1	0.2	1.3	0.0	0.0	0.0

ASSAYS										ppm
	SG	%Cu	%Pb	%Zn	%As	%Sn	%Bi	%Fe	Au	
Calc'd	4.55	0.56	0.00	0.00	18.8	0.03	0.00	32.6		
Actual		0.43	0.17	0.06	>10	0.99	0.03		7.01	

Mineral Abbreviations			
Cp	Chalcopyrite	Ma	Marcasite
Sp	Sphalerite	Po	Pyrrhotite
Gn	Galena	As	Arsenopyrite
Cs	Cassiterite	Qz	Quartz
St	Stannite	Cl	Chlorite
Bm	Bismuthinite	Co	Carbonate
Bi	Native Bismuth	Mu	Muscovite
Py	Pyrite	Ru	Rutile
Me	Melnikovite	Cy	Clay

Economic Mineral Scan Data - 53µm Mask

COMPOSITE PROPORTIONS							
	Cp	Sp	Gn	Cs	St	Bm	Bi
Mono	0	0	0	0	0	0	0
Binary	12	0	0	0	0	0	0
Ternary	22	0	0	27	0	0	0
Quat.y+	66	0	0	73	100	0	0

BINARY ASSOCIATION MATRIX													
	Cp	Sp	Gn	Cs	St	Bm	Bi	Py	Me	Ma	Po	As	Ga
Cp		0	0	0	0	0	0	0	0	0	0	0	12
Sp	0		0	0	0	0	0	0	0	0	0	0	0
Gn	0	0		0	0	0	0	0	0	0	0	0	0
Cs	0	0	0		0	0	0	0	0	0	0	0	0
St	0	0	0	0		0	0	0	0	0	0	0	0
Bm	0	0	0	0	0		0	0	0	0	0	0	0
Bi	0	0	0	0	0	0		0	0	0	0	0	0

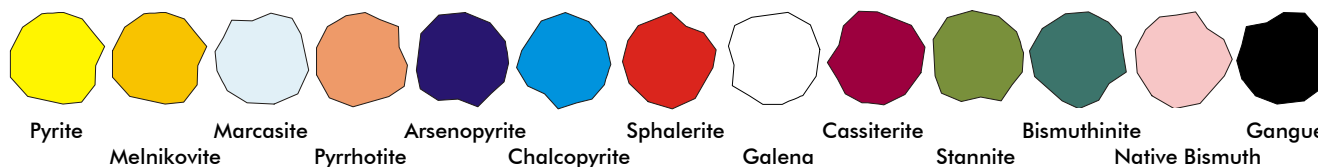
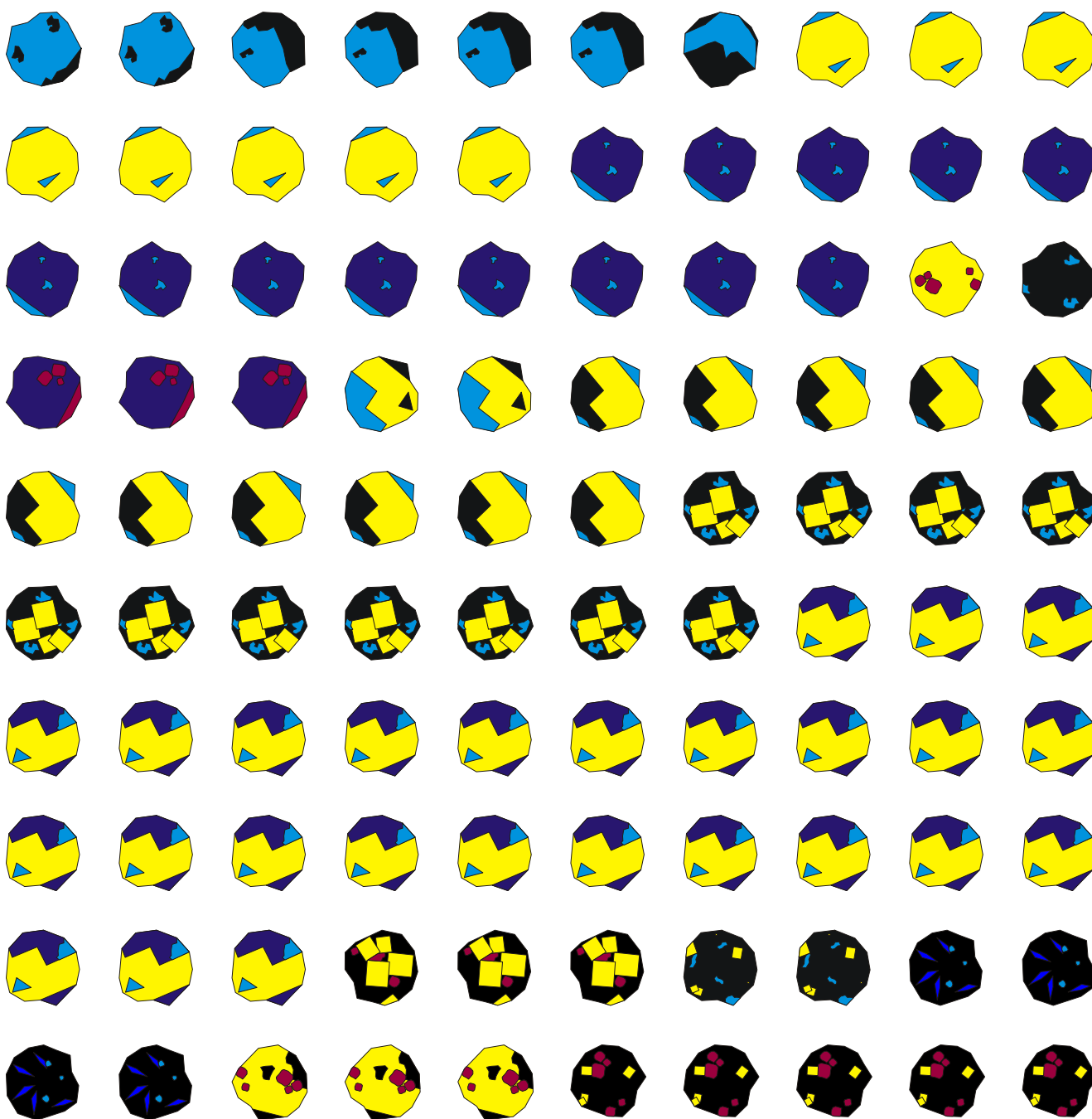
TOTAL ASSOCIATION MATRIX													
	Cp	Sp	Gn	Cs	St	Bm	Bi	Py	Me	Ma	Po	As	Ga
Cp		0	0	14	0	0	0	82	16	0	0	60	100
Sp	0		0	0	0	0	0	0	0	0	0	0	0
Gn	0	0		0	0	0	0	0	0	0	0	0	0
Cs	43	0	0		6	0	0	99	5	0	0	76	93
St	25	0	0	100		0	0	100	0	0	0	25	100
Bm	0	0	0	0	0		0	0	0	0	0	0	0
Bi	0	0	0	0	0	0		0	0	0	0	0	0

Unity Mining - Lakeside Drillcore Mineralogy

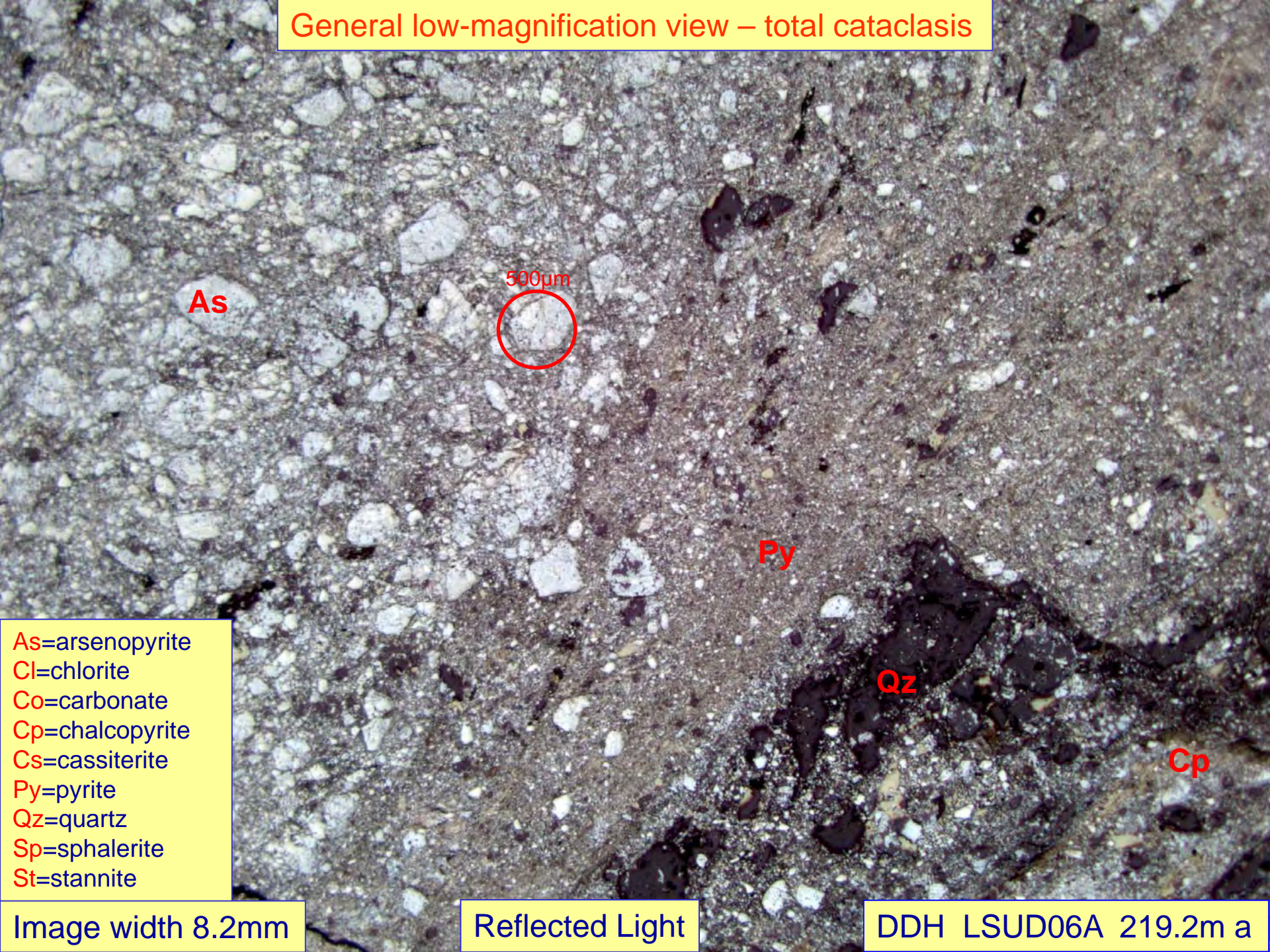
DDH LSUD06A 219.2m
Cu-Sn-Bi-Zn-Pb SCAN

53µm Mask

February 2013



General low-magnification view – total cataclasis



As

500µm

Py

Qz

Cp

As=arsenopyrite
Cl=chlorite
Co=carbonate
Cp=chalcopyrite
Cs=cassiterite
Py=pyrite
Qz=quartz
Sp=sphalerite
St=stannite

Image width 8.2mm

Reflected Light

DDH LSUD06A 219.2m a

Extreme cataclasis

Py

Co

As

image c

Py

Py/Qz

Py

106 μ m

As

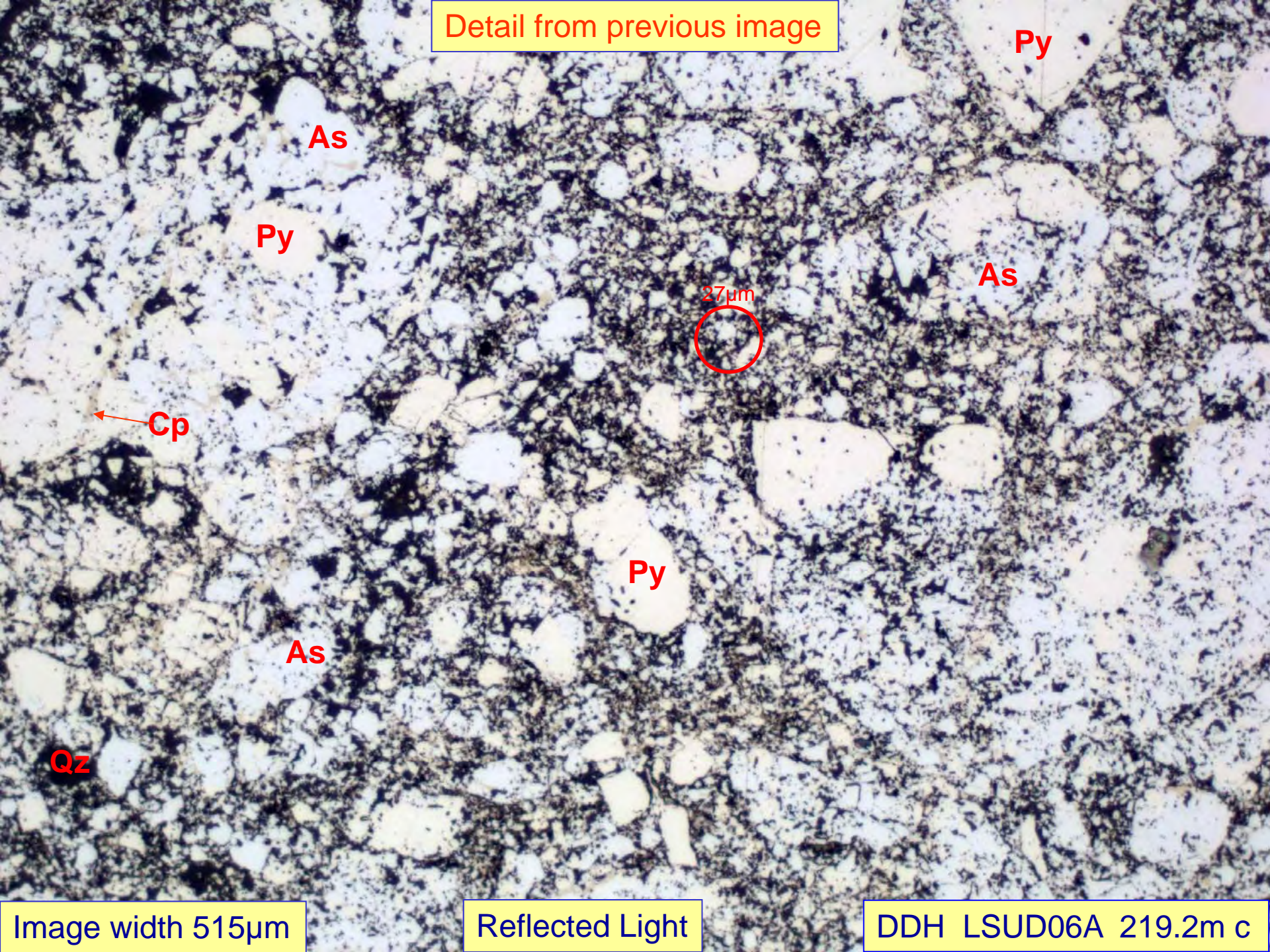
As

Image width 2.1mm

Reflected Light

DDH LSUD06A 219.2m b

Detail from previous image



Py

As

Py

As

27µm

Cp

Py

As

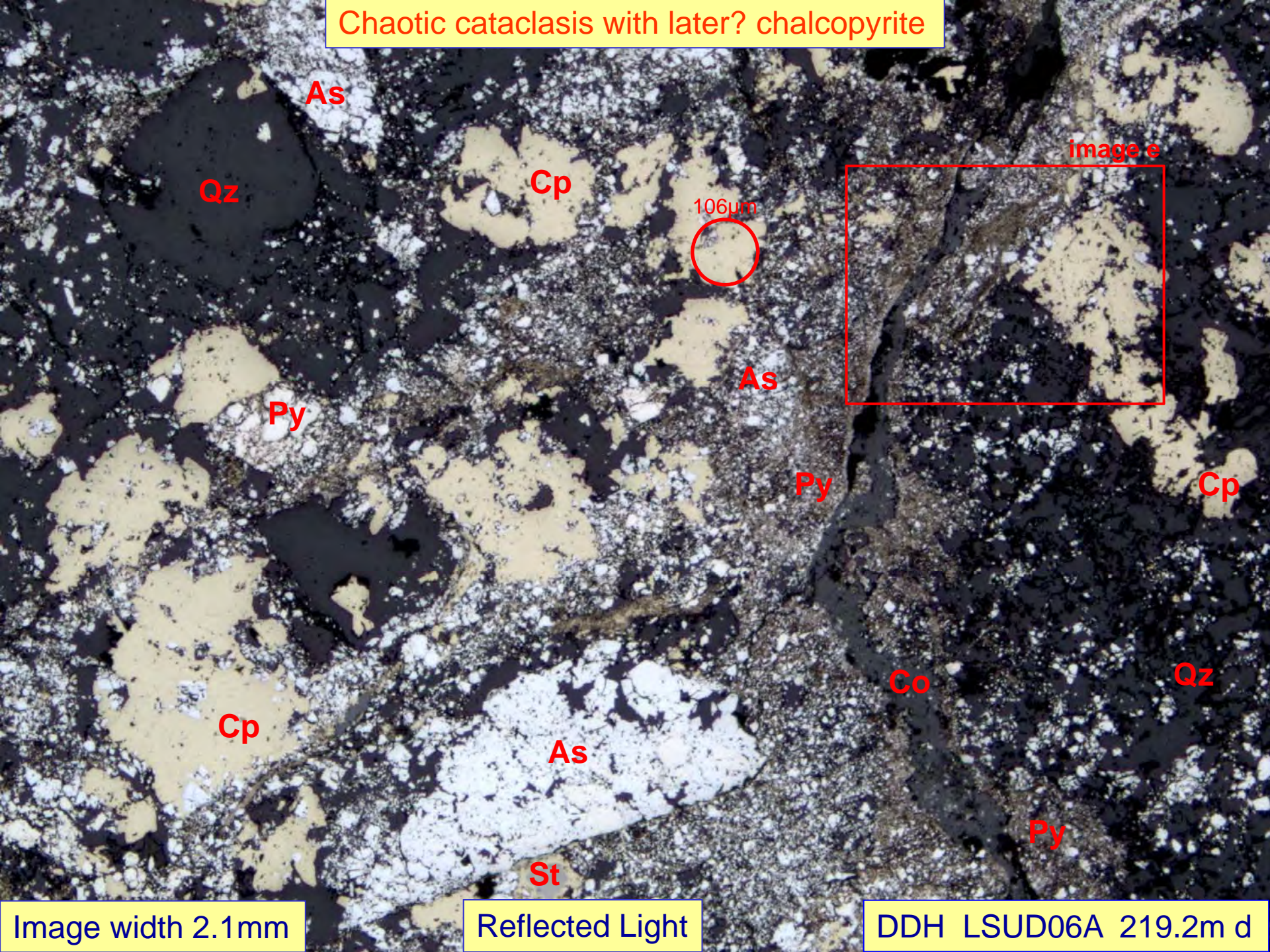
Qz

Image width 515µm

Reflected Light

DDH LSUD06A 219.2m c

Chaotic cataclasis with later? chalcopyrite



Qz

As

Cp

106µm

image e

As

Py

Py

Cp

Cp

As

Co

Qz

St

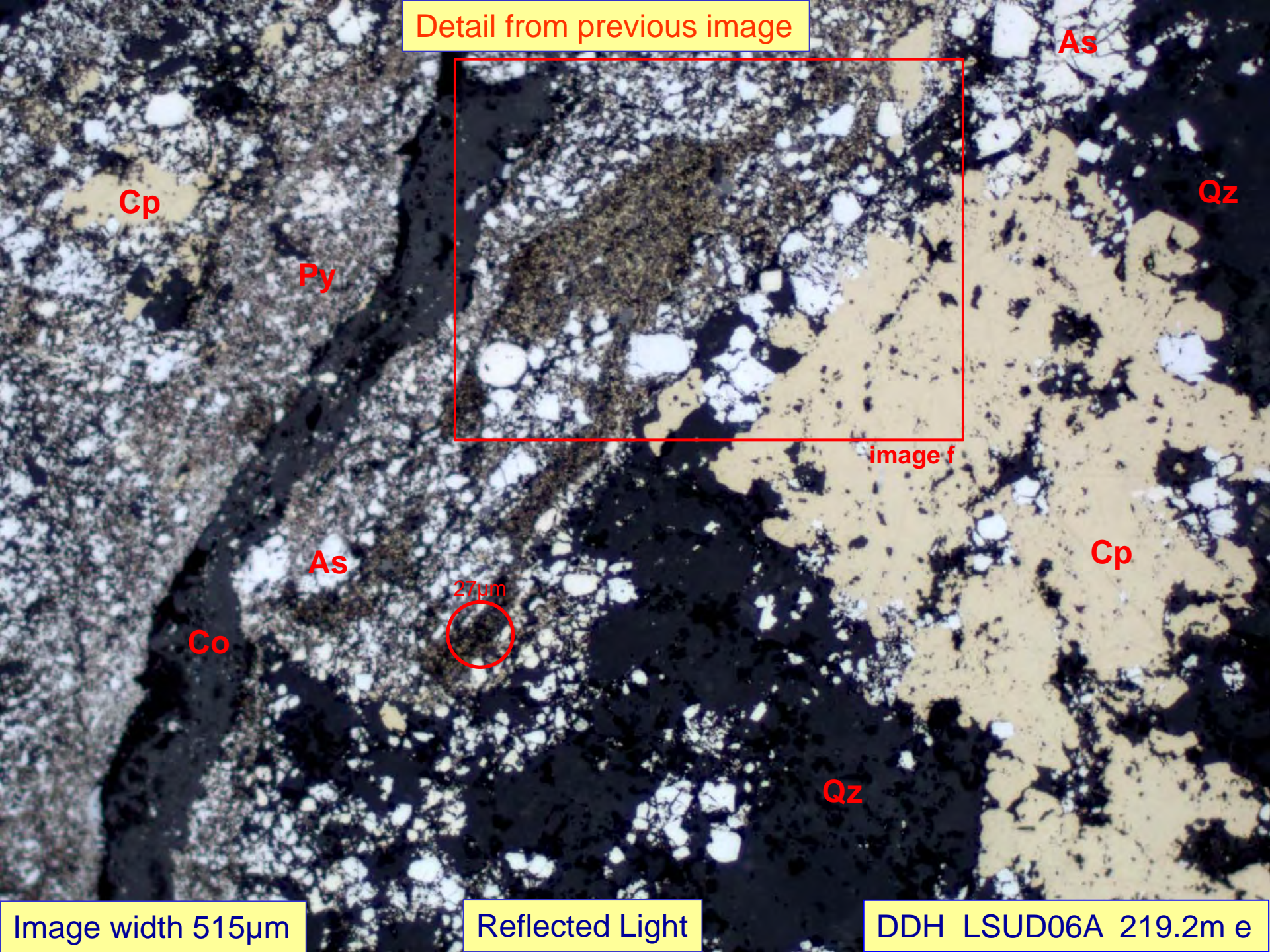
Py

Image width 2.1mm

Reflected Light

DDH LSUD06A 219.2m d

Detail from previous image



As

Qz

Cp

Py

image f

As

Cp

Co

27µm

Qz

Image width 515µm

Reflected Light

DDH LSUD06A 219.2m e

Extreme detail of previous image

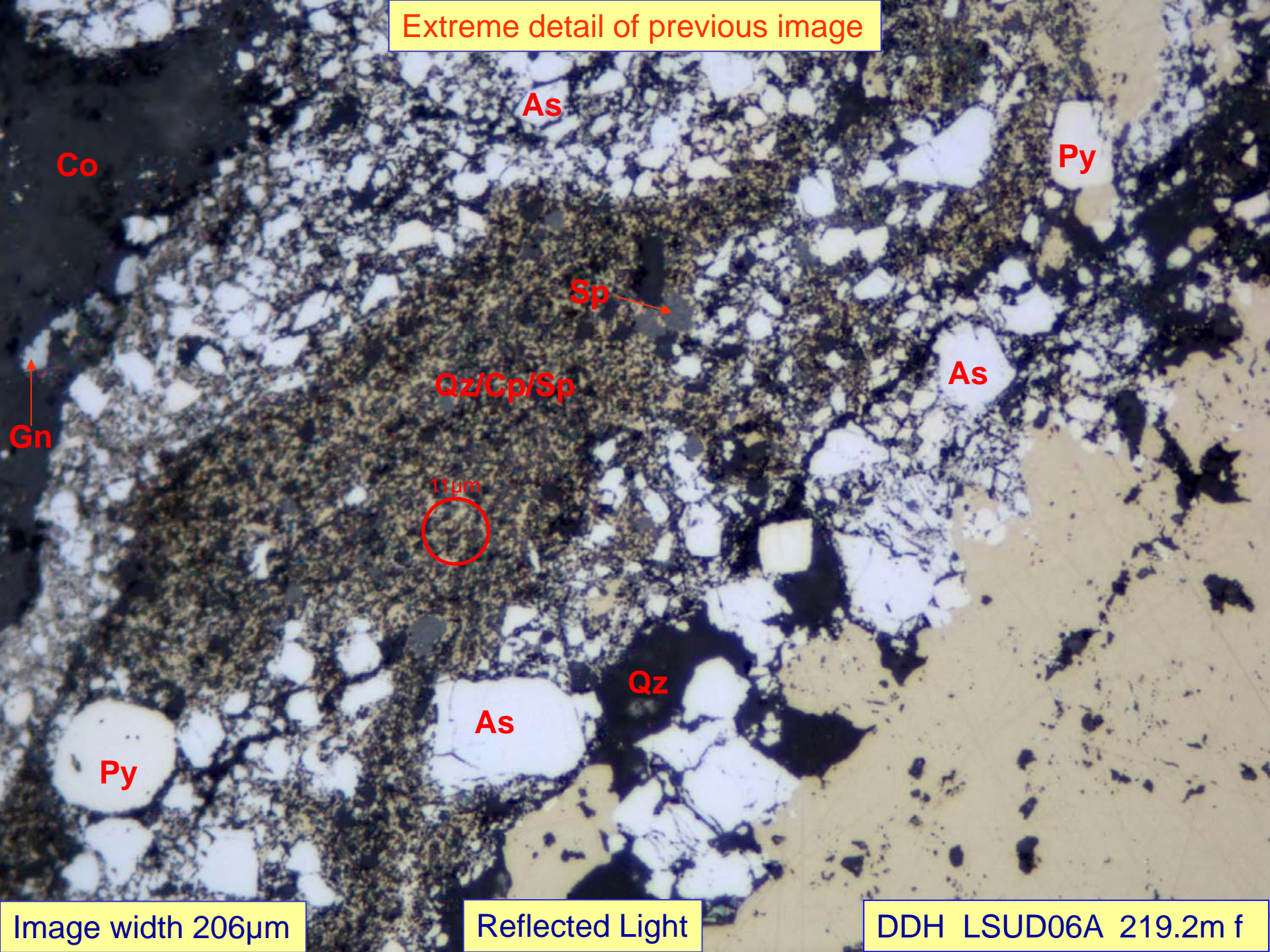


Image width 206µm

Reflected Light

DDH LSUD06A 219.2m f

Chaotic cataclasis

Py/Cp

image h

106µm

Py

As/Py

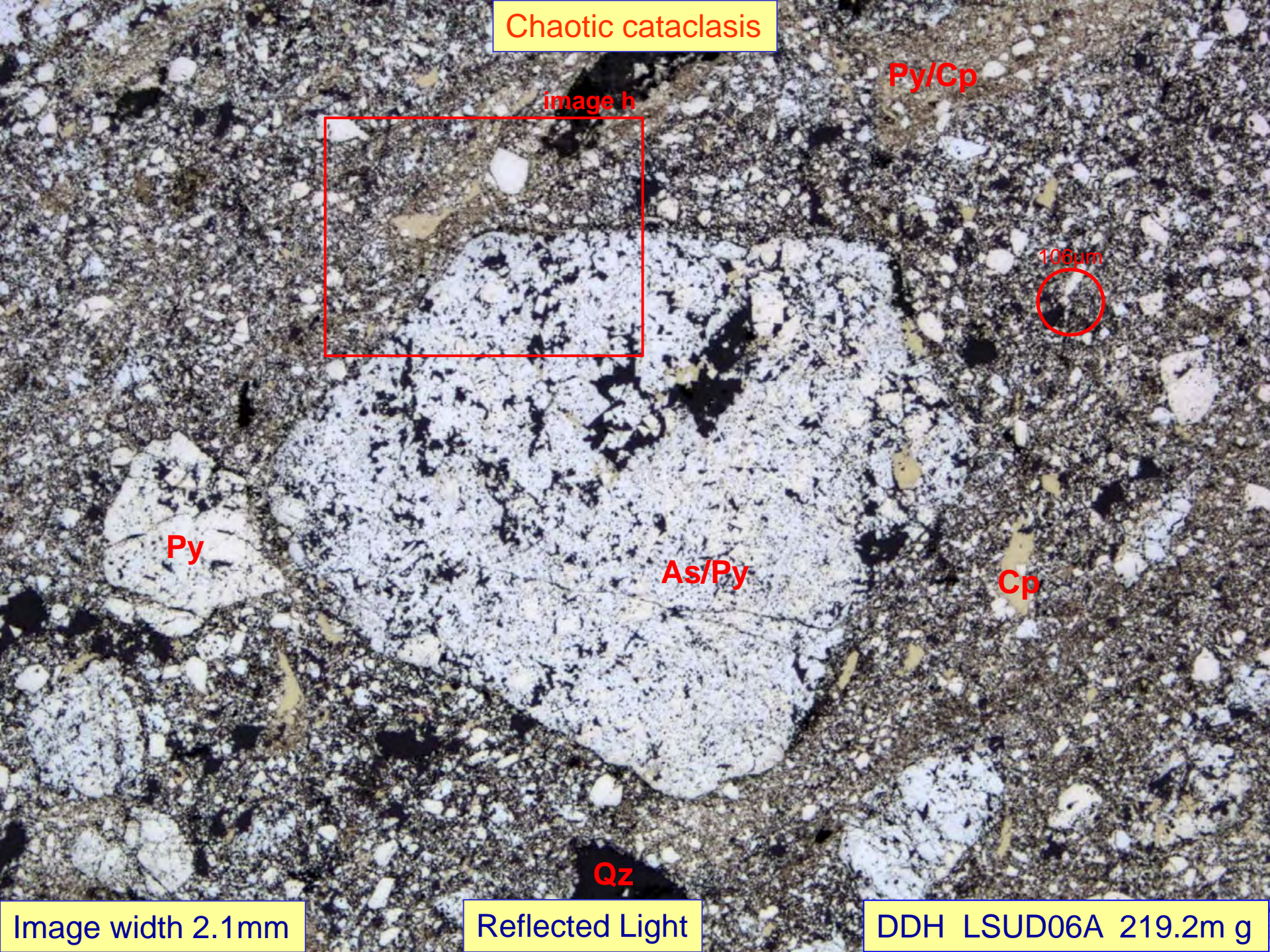
Cp

Qz

Image width 2.1mm

Reflected Light

DDH LSUD06A 219.2m g



Detail from previous image

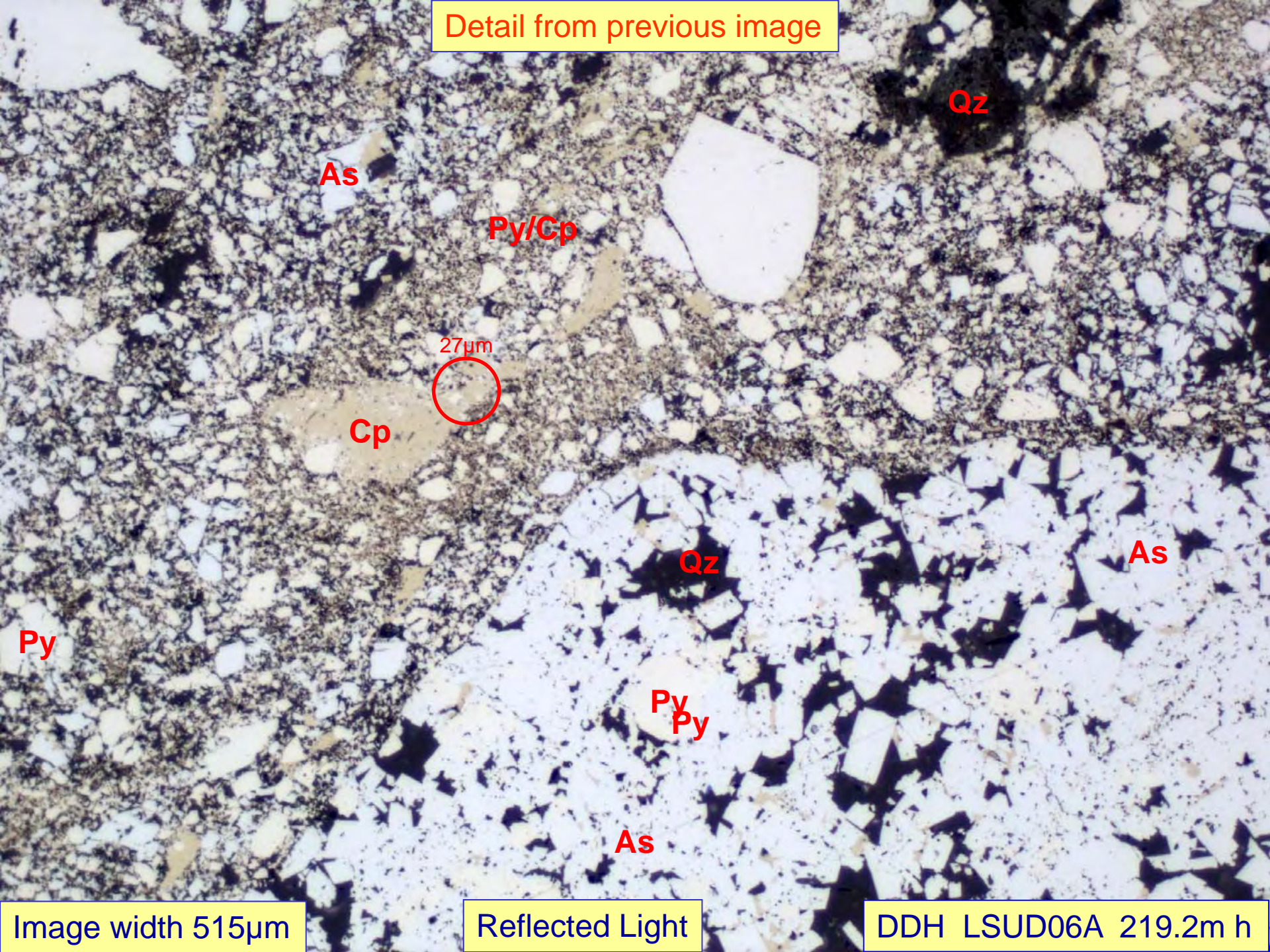


Image width 515µm

Reflected Light

DDH LSUD06A 219.2m h

Late? quartz-chalcopyrite

As

Py

As

27µm



Cp

Qz

Cp

Py/Qz

As

Py

Image width 515µm

Reflected Light

DDH LSUD06A 219.2m i

Chalcopyrite rims on stannite-sphalerite

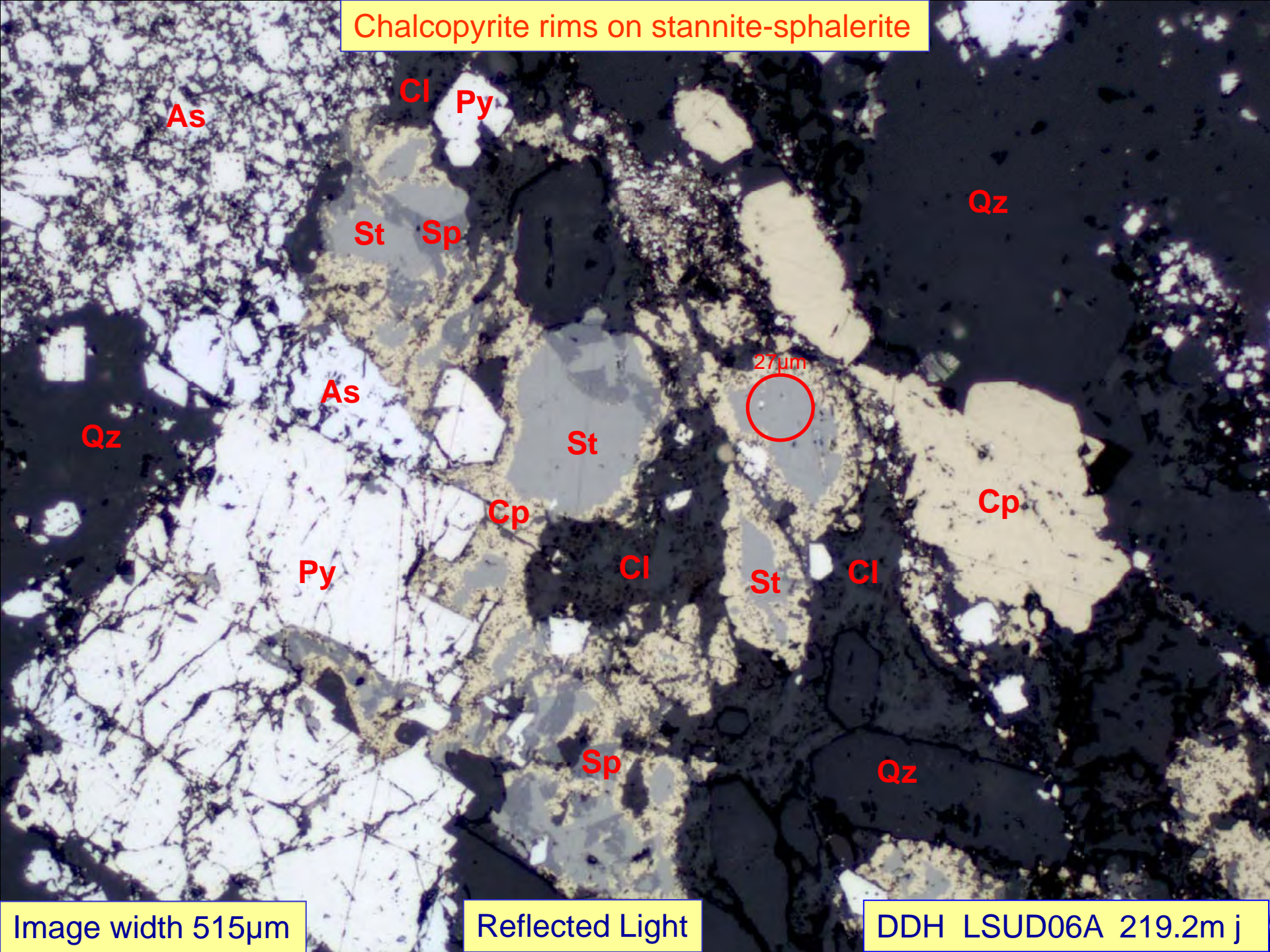


Image width 515µm

Reflected Light

DDH LSUD06A 219.2m j

Cataclasis on multiple microfaults

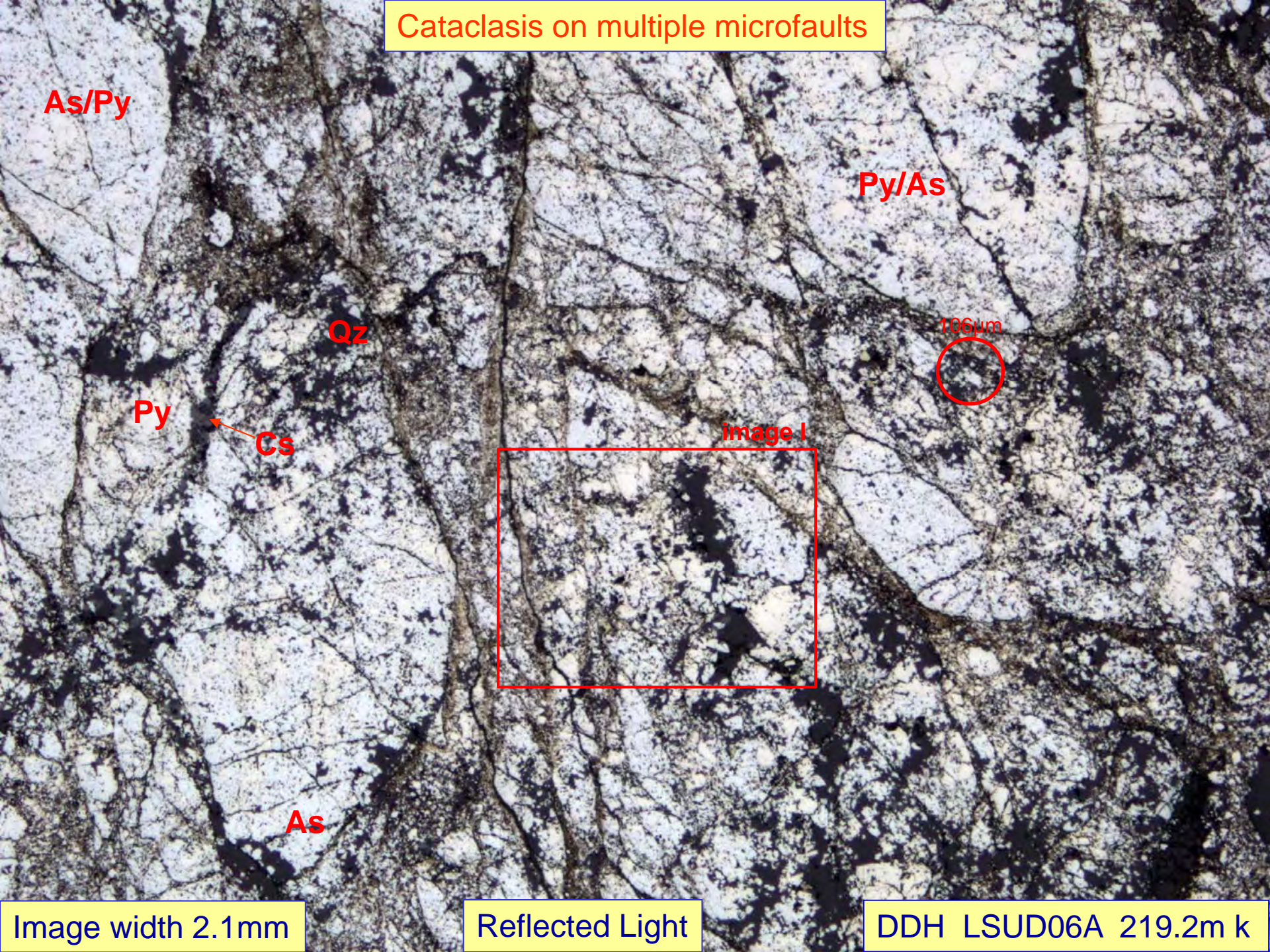


Image width 2.1mm

Reflected Light

DDH LSUD06A 219.2m k

Detail from previous image

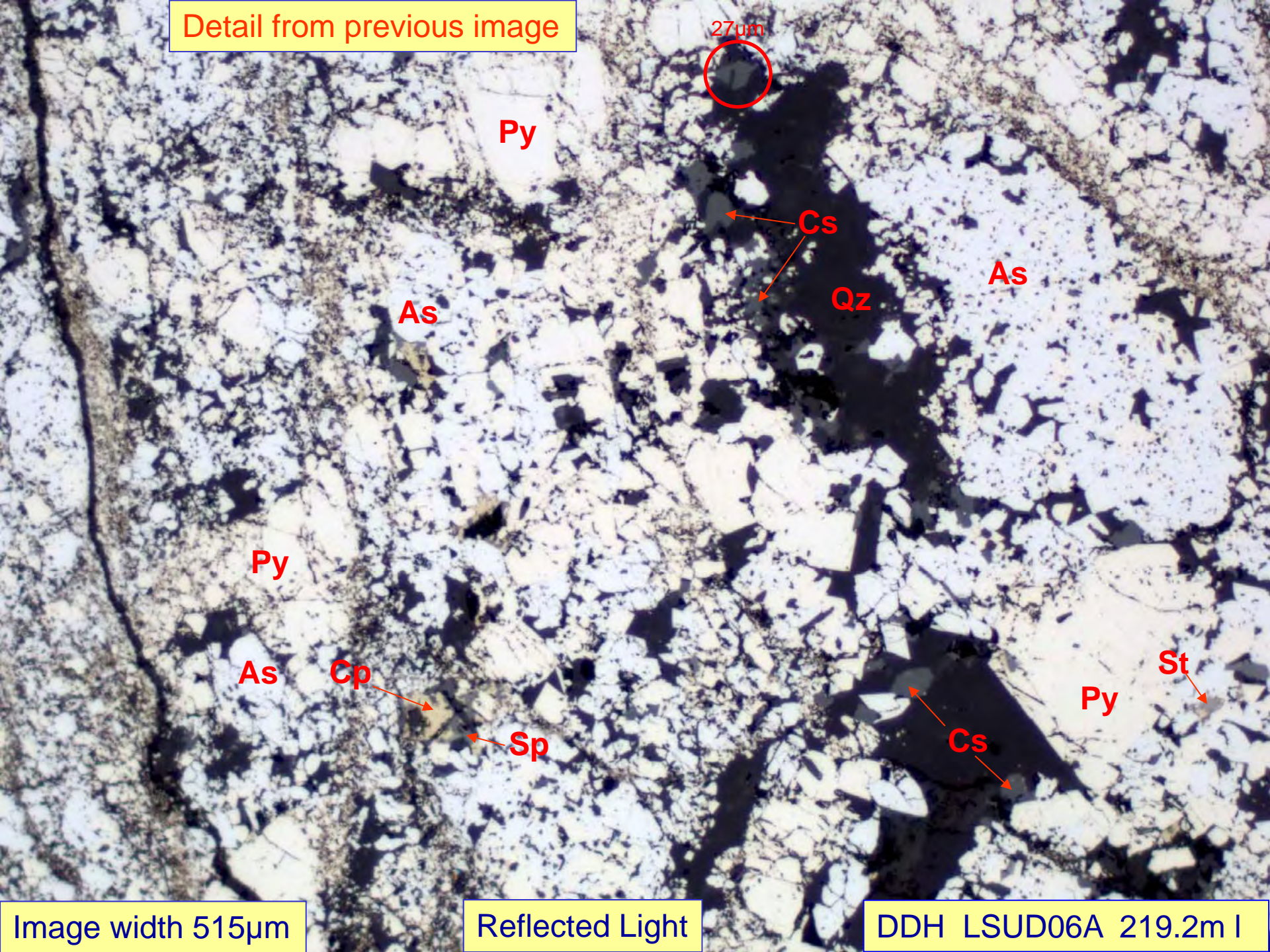


Image width 515µm

Reflected Light

DDH LSUD06A 219.2m I

Detail of chalcopyrite-sphalerite-stannite

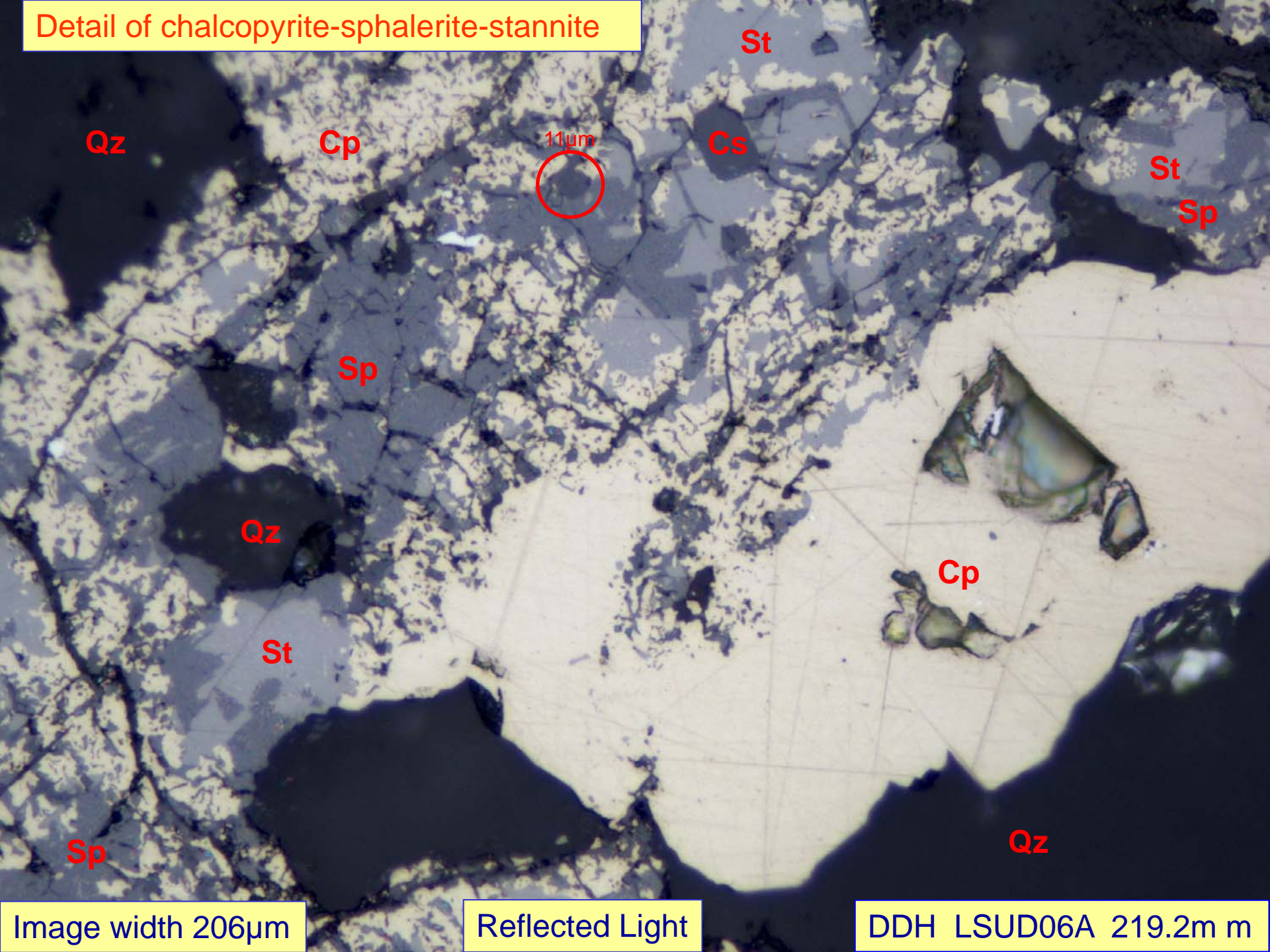


Image width 206µm

Reflected Light

DDH LSUD06A 219.2m m

Detail of chalcopyrite-cassiterite-stannite-sphalerite

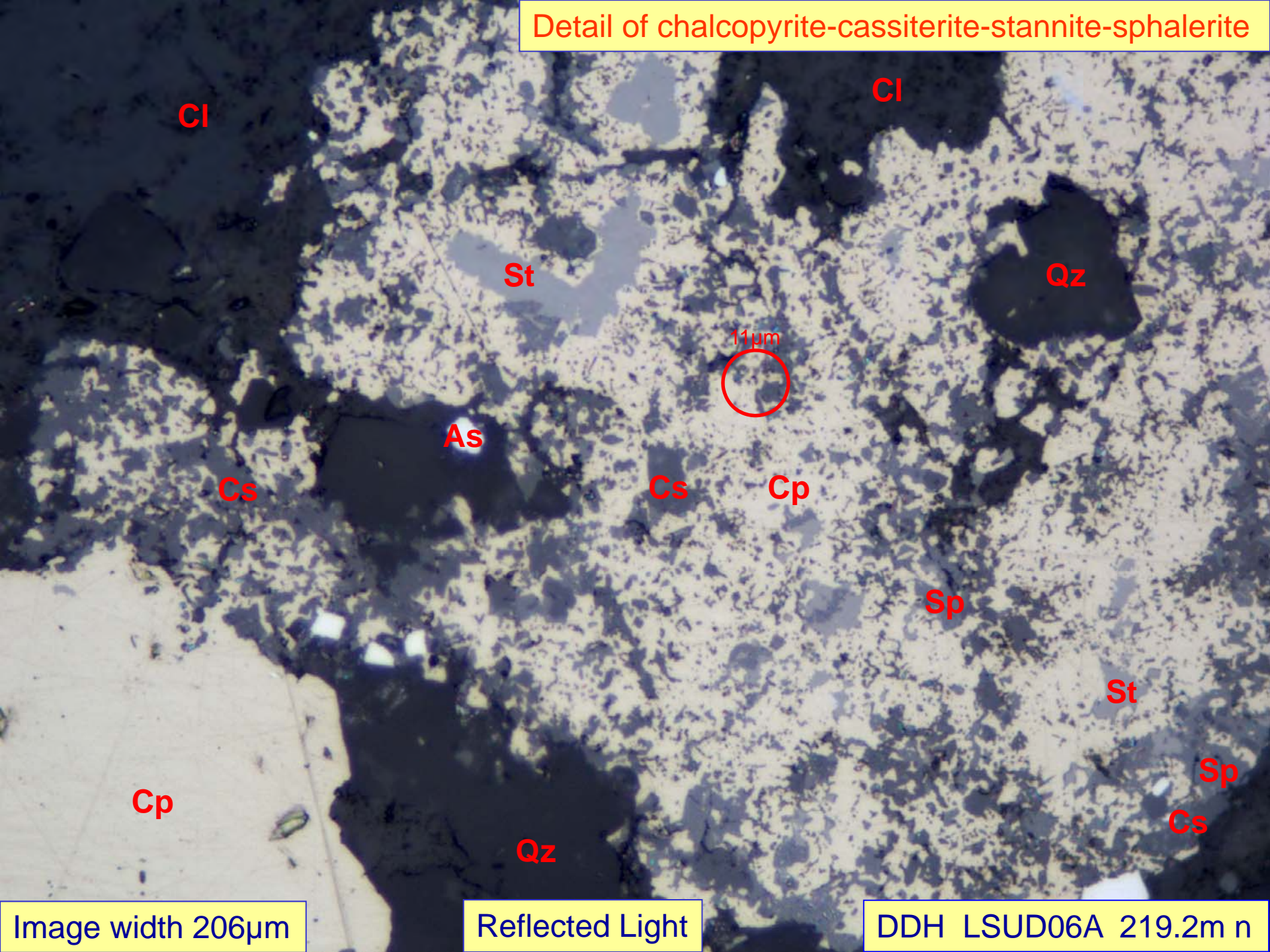


Image width 206µm

Reflected Light

DDH LSUD06A 219.2m n

Chalcopyrite before cataclasis?

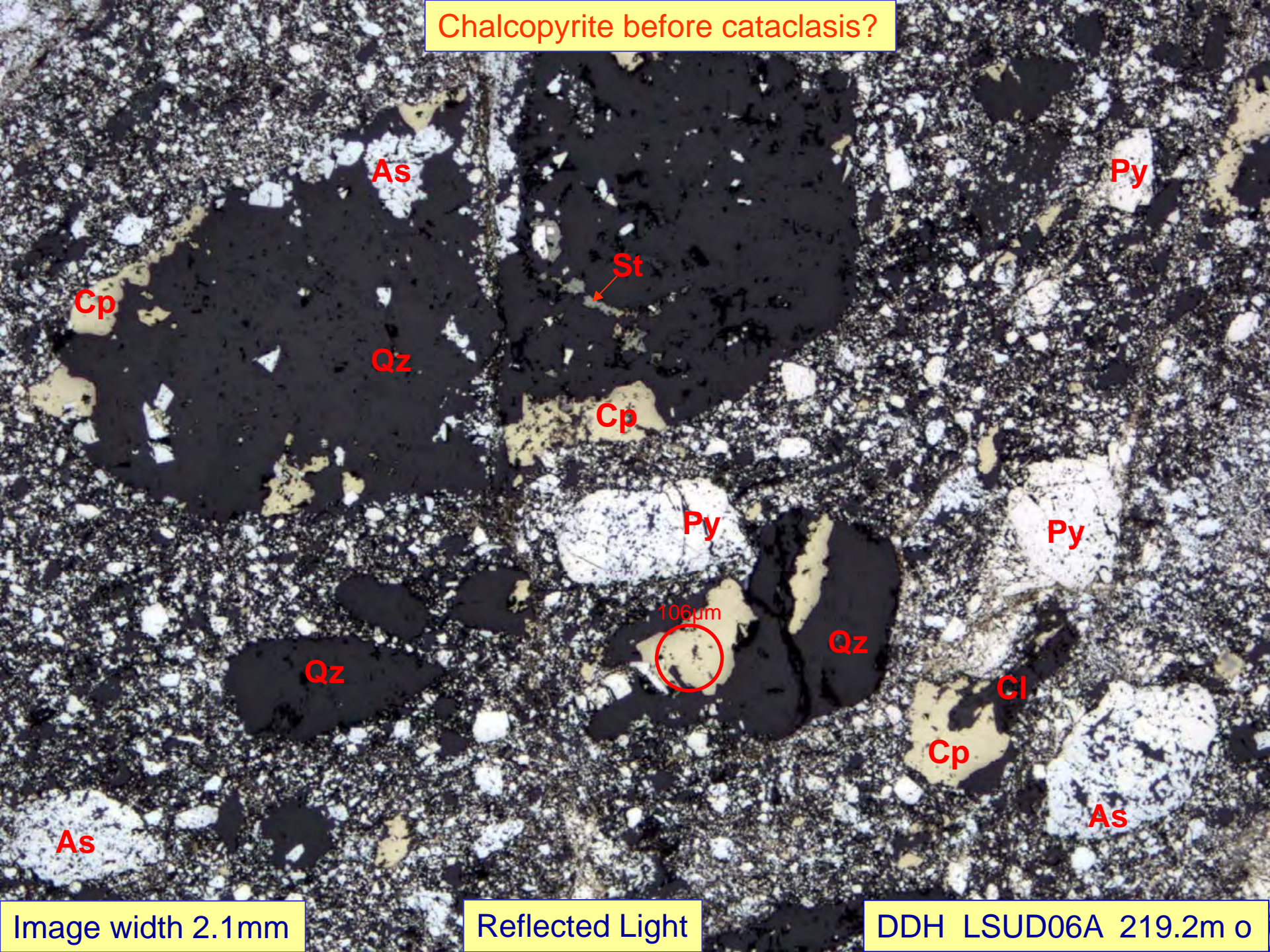


Image width 2.1mm

Reflected Light

DDH LSUD06A 219.2m o