

# **Die Michelsberger Kultur im Mittelrheingebiet und im Trierer Land**

*Wirtschaftsgeographische Studien zu  
jungneolithischen Gesellschaften*

Teil IV

Beilagen

Inauguraldissertation  
zur Erlangung des Akademischen Grades eines Dr. Phil.,  
vorgelegt dem Fachbereich 07 Geschichts- und Kulturwissenschaften  
der Johannes Gutenberg-Universität Mainz

von

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aus Groß-Gerau  
2015

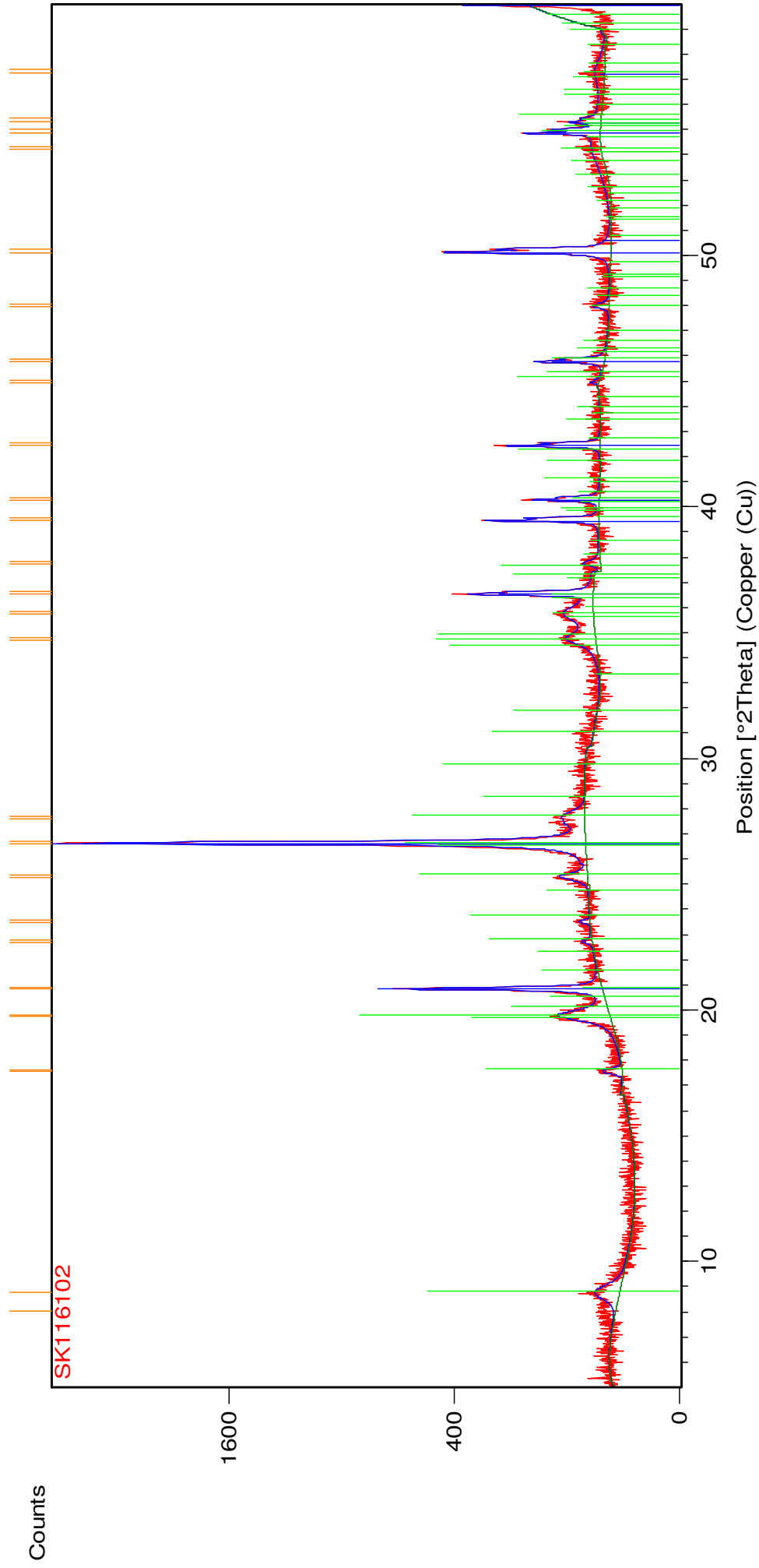
Referent: Prof. Dr. Detlef Gronenborn  
Korreferent: Prof. Dr. Wolfgang Wilcke

Tag der Prüfung: 12.10.2016





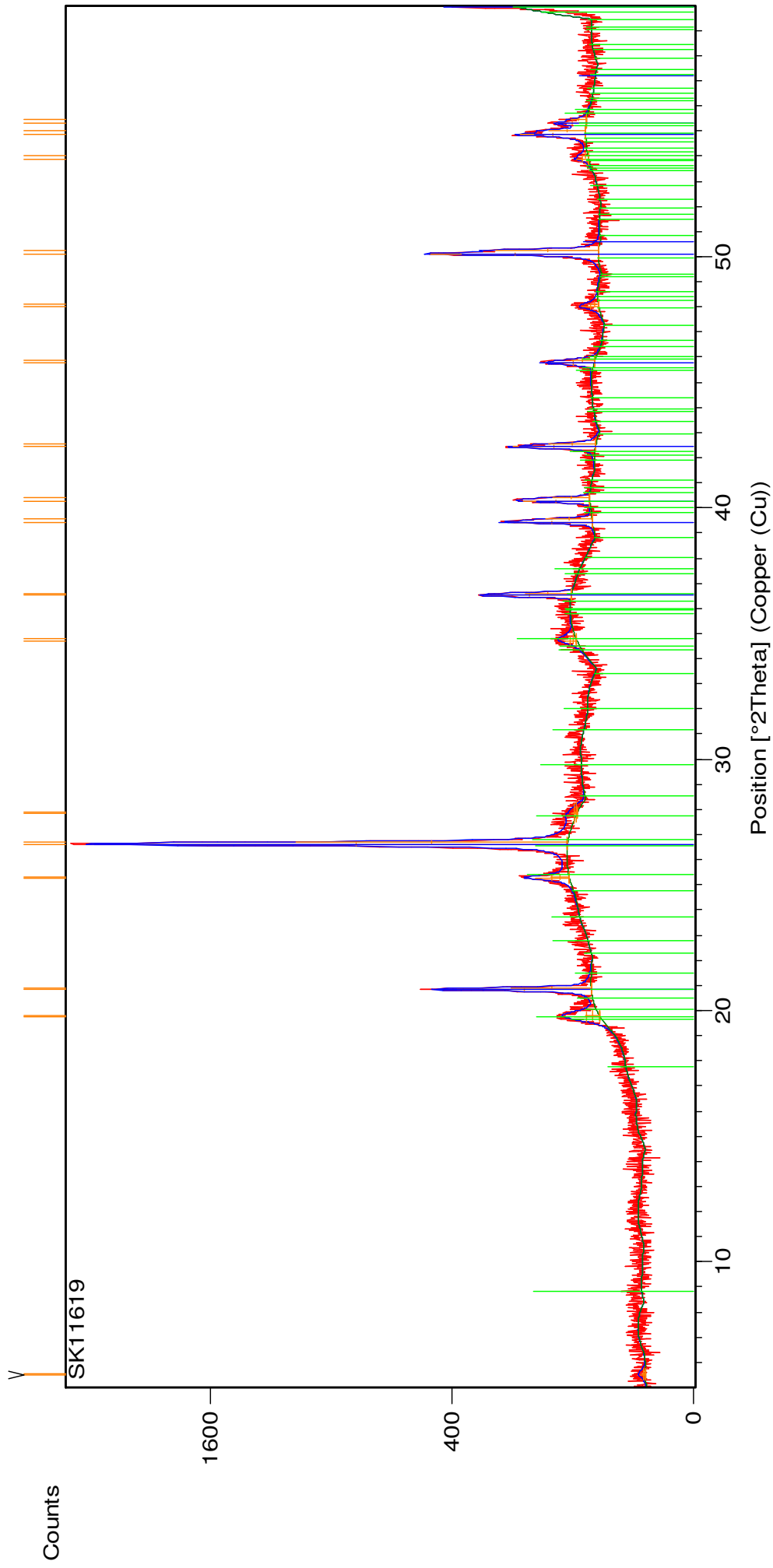
## Beilage 1: XRD-Diagramme Erdwerk Mayen (MAE)



Peak List

01-070-3755; Quartz

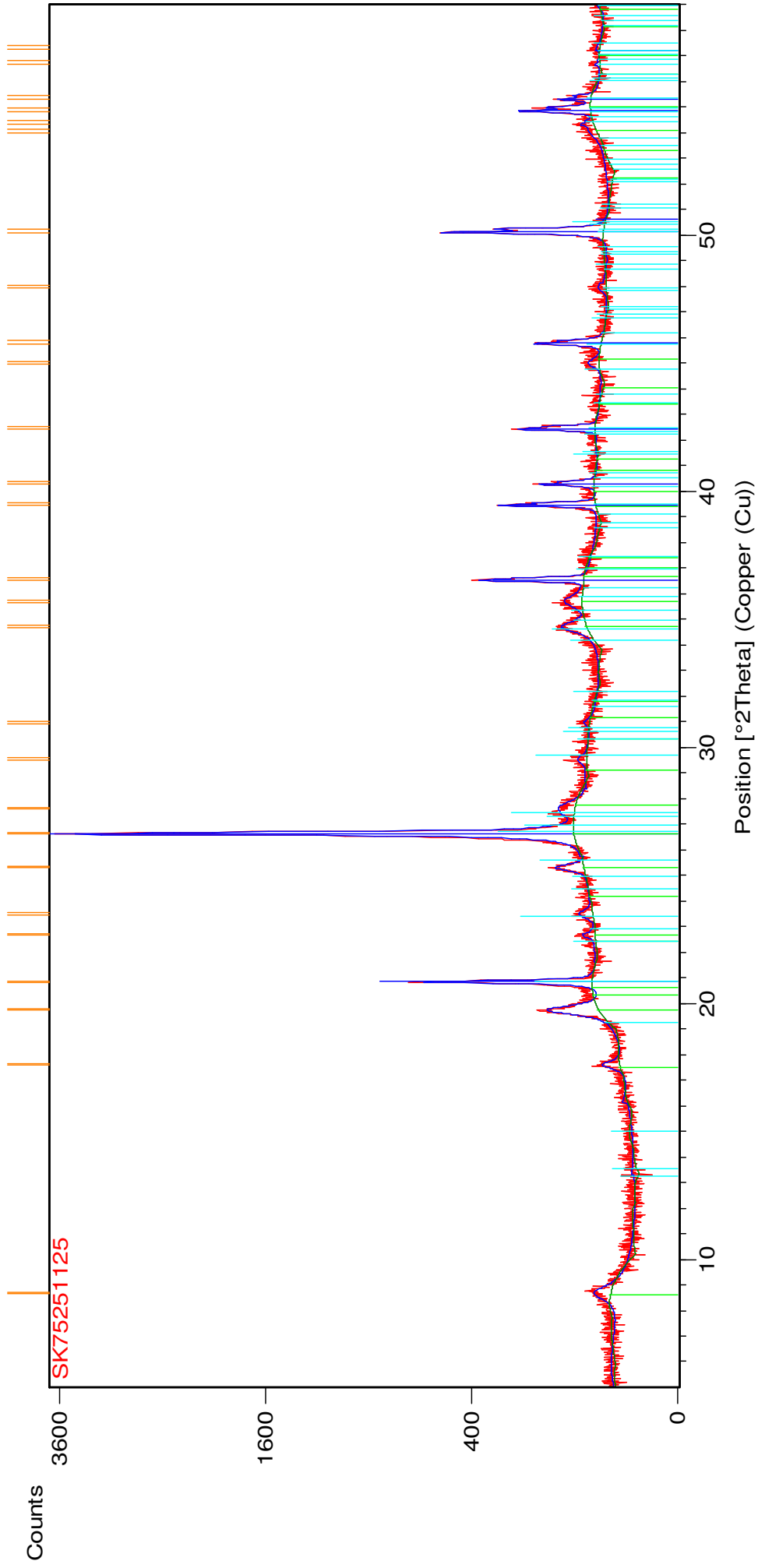
01-070-3754; Illite



Peak List

00-046-1045; Si O<sub>2</sub>; Quartz, syn

01-089-7536; K ( Al , Fe )<sub>2</sub> Al Si<sub>3</sub> O<sub>10</sub> ( O H )<sub>2</sub>; Phengite 2M1, Fe-rich

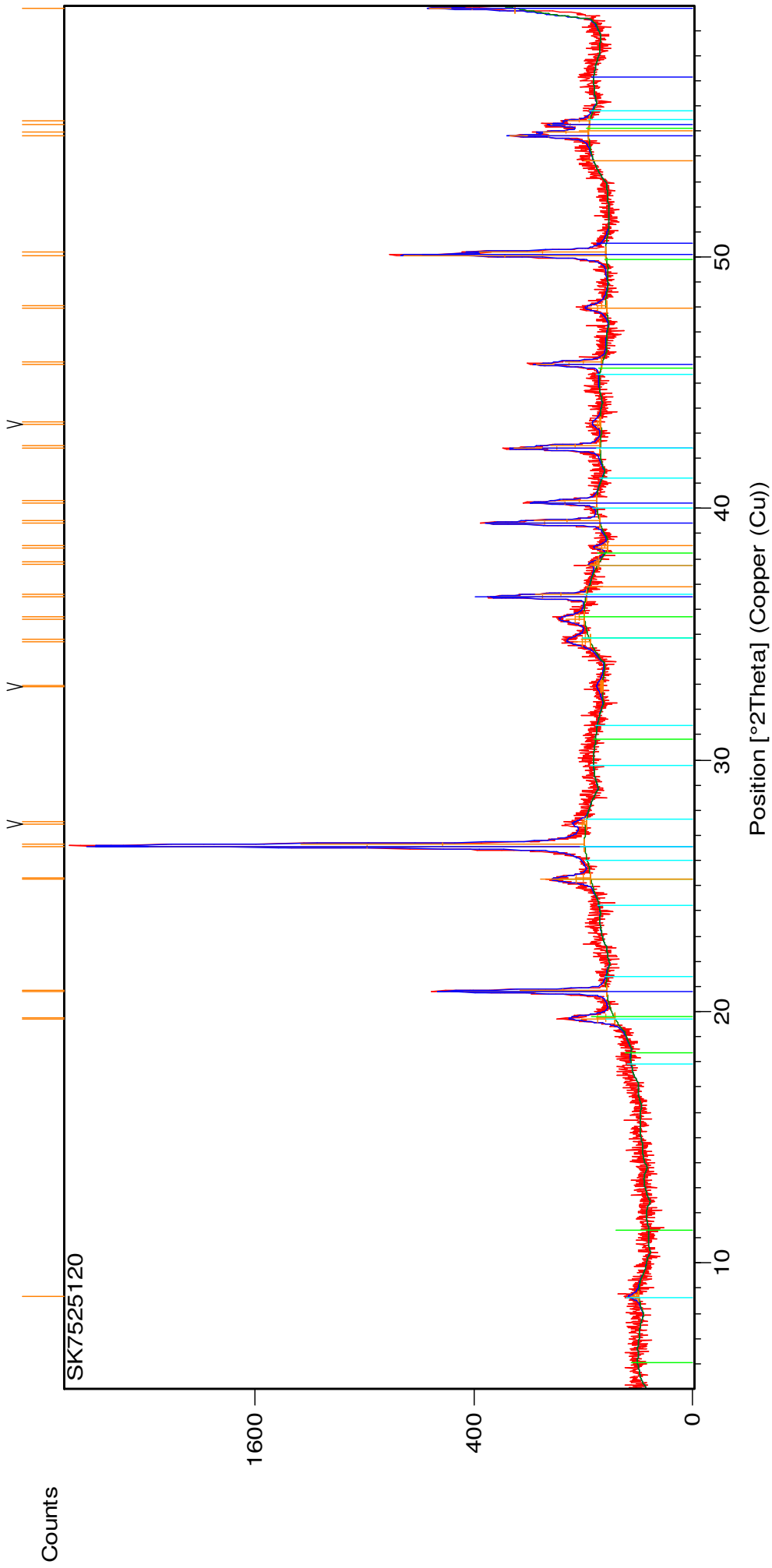


Peak List

01-086-1560; Quartz

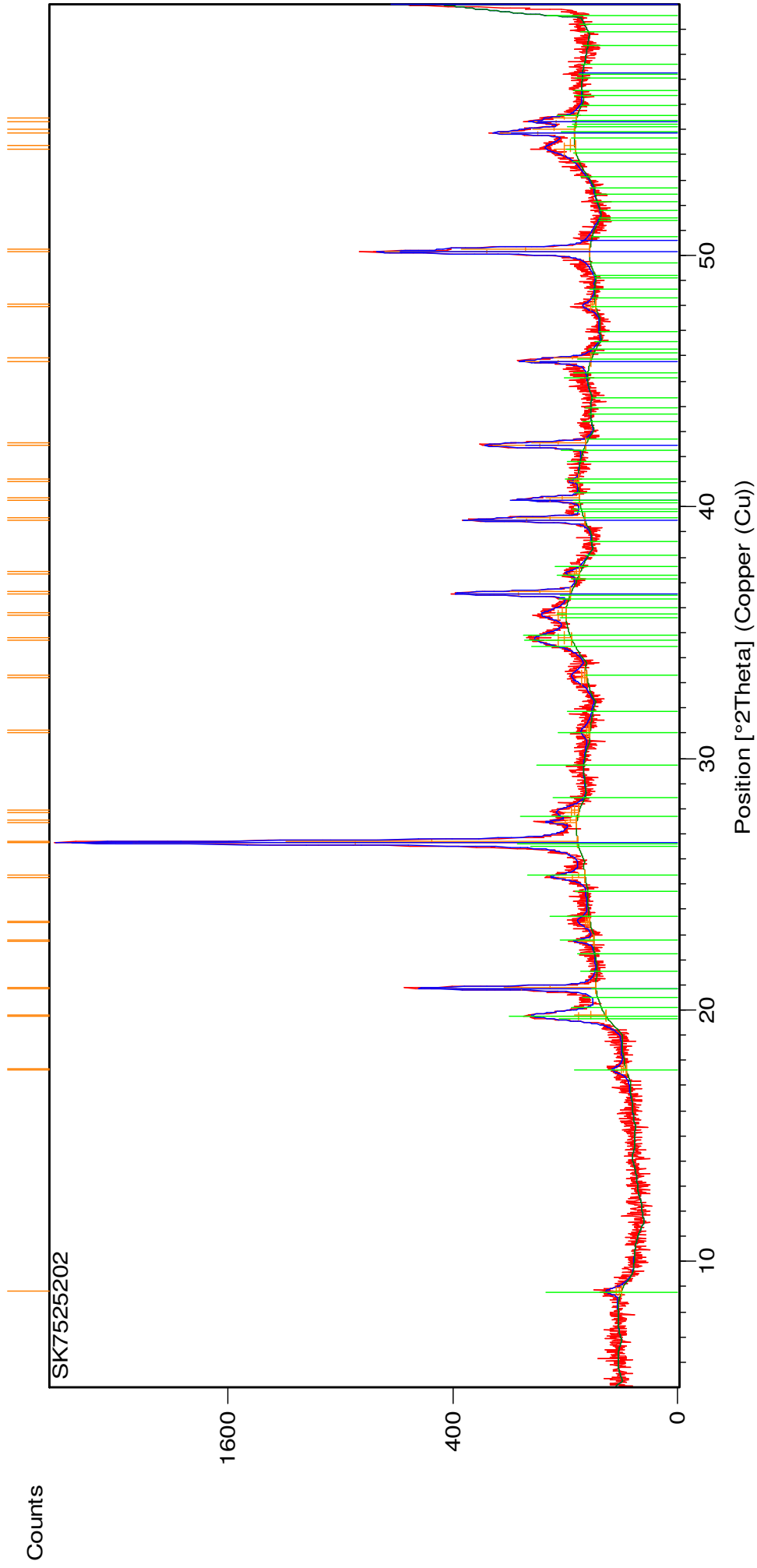
00-043-0685; Illite-2\ITMARG#2 [NR]

01-077-0992; Sanidine ferric



Peak List

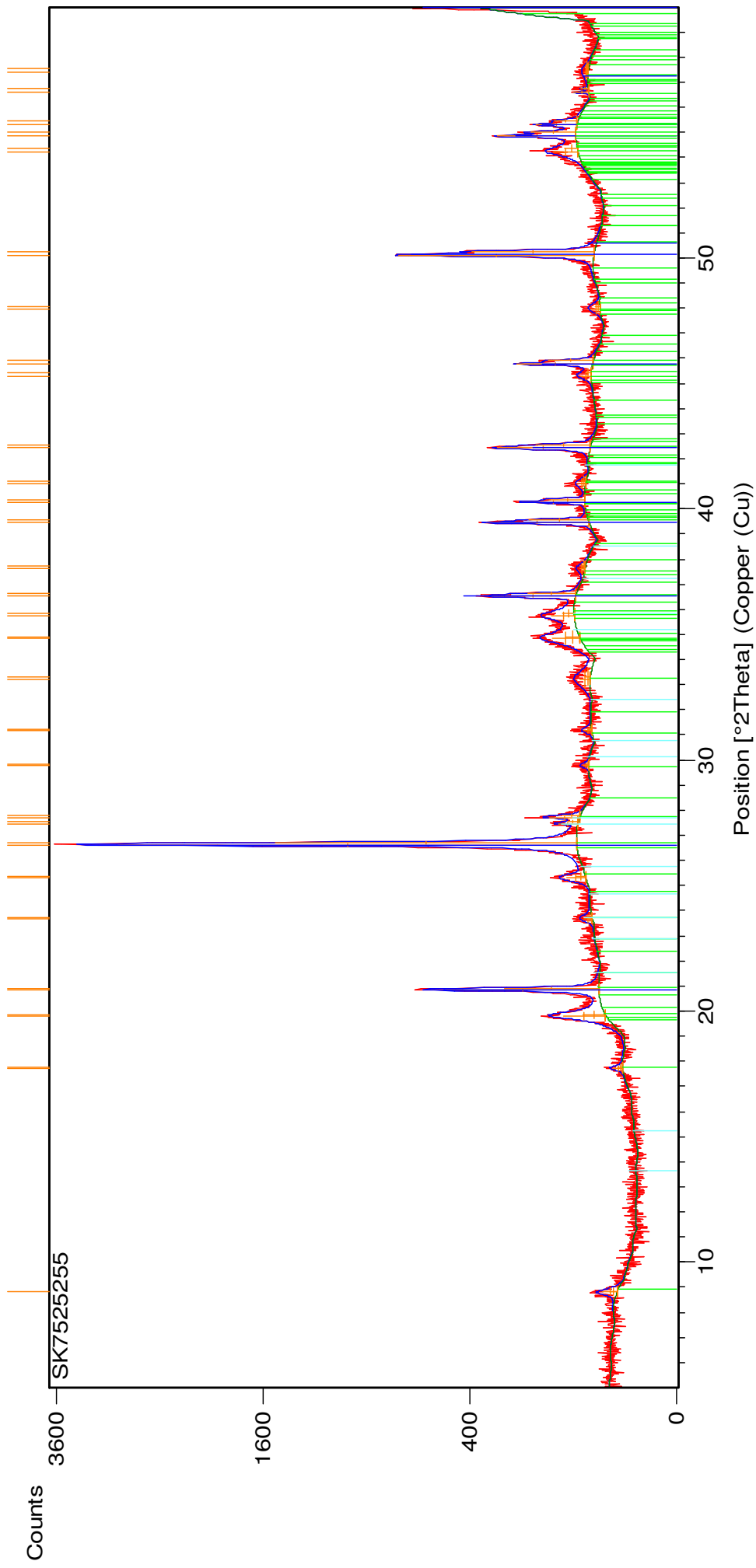
96-901-3322; Si3.00 O6.00; Quartz
00-039-0381; Na0.5 Al6 ( Si , Al )8 O20 ( O H )10 ! H2 O; Chlorite-vermiculite-montmorillonite
00-002-0050; 2 K2 O !3 Mg O ! Al2 O3 !24 Si O2 !12 H2 O; Illite
01-084-1285; Ti O2; Anatase, syn



Peak List

96-901-3322; Si3.00 O6.00; Quartz

01-070-3754; K (Al4 Si2 O9 (OH)3); Illite

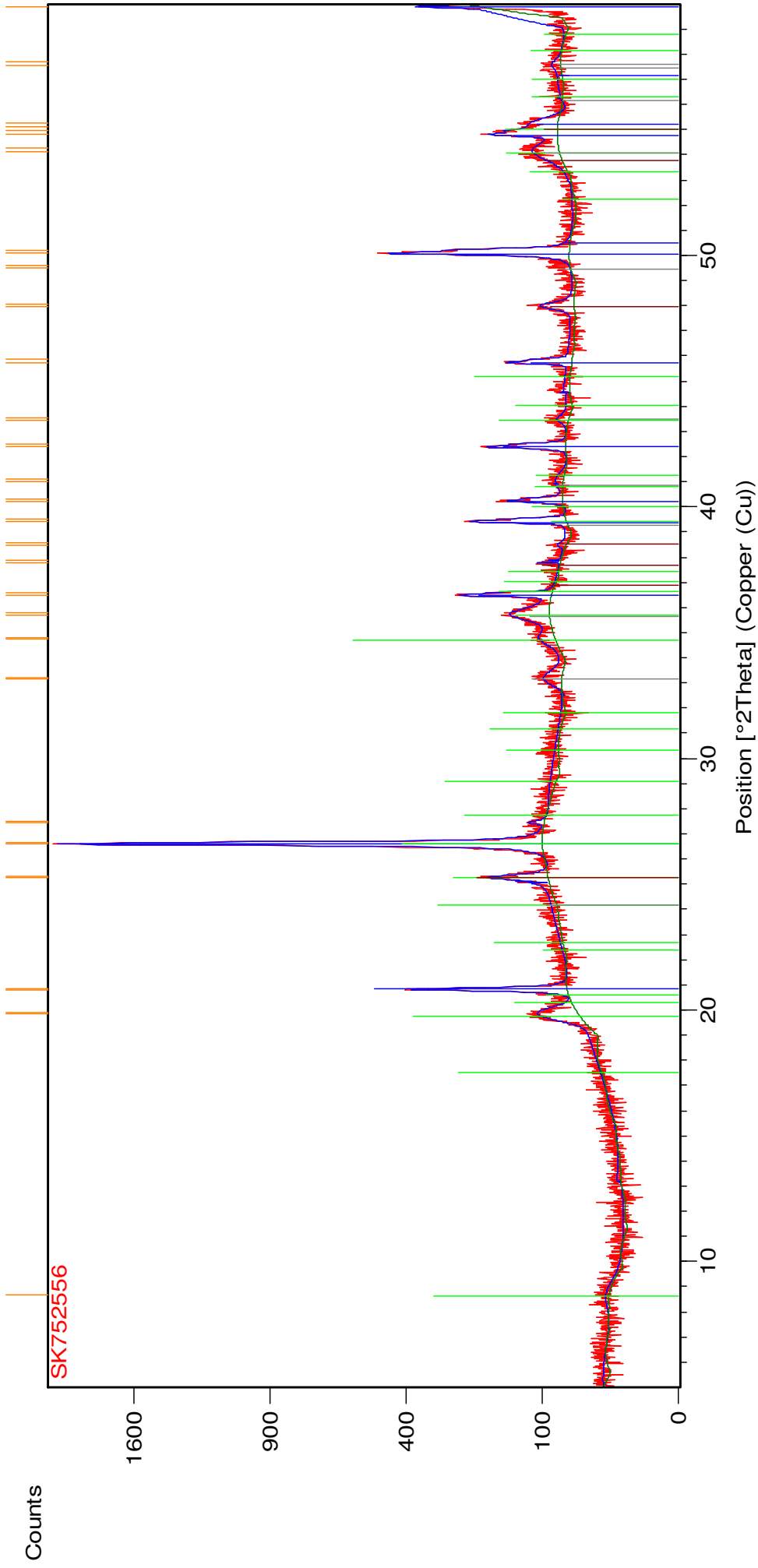


Peak List

96-500-0036; Si3.00 O6.00; Quartz

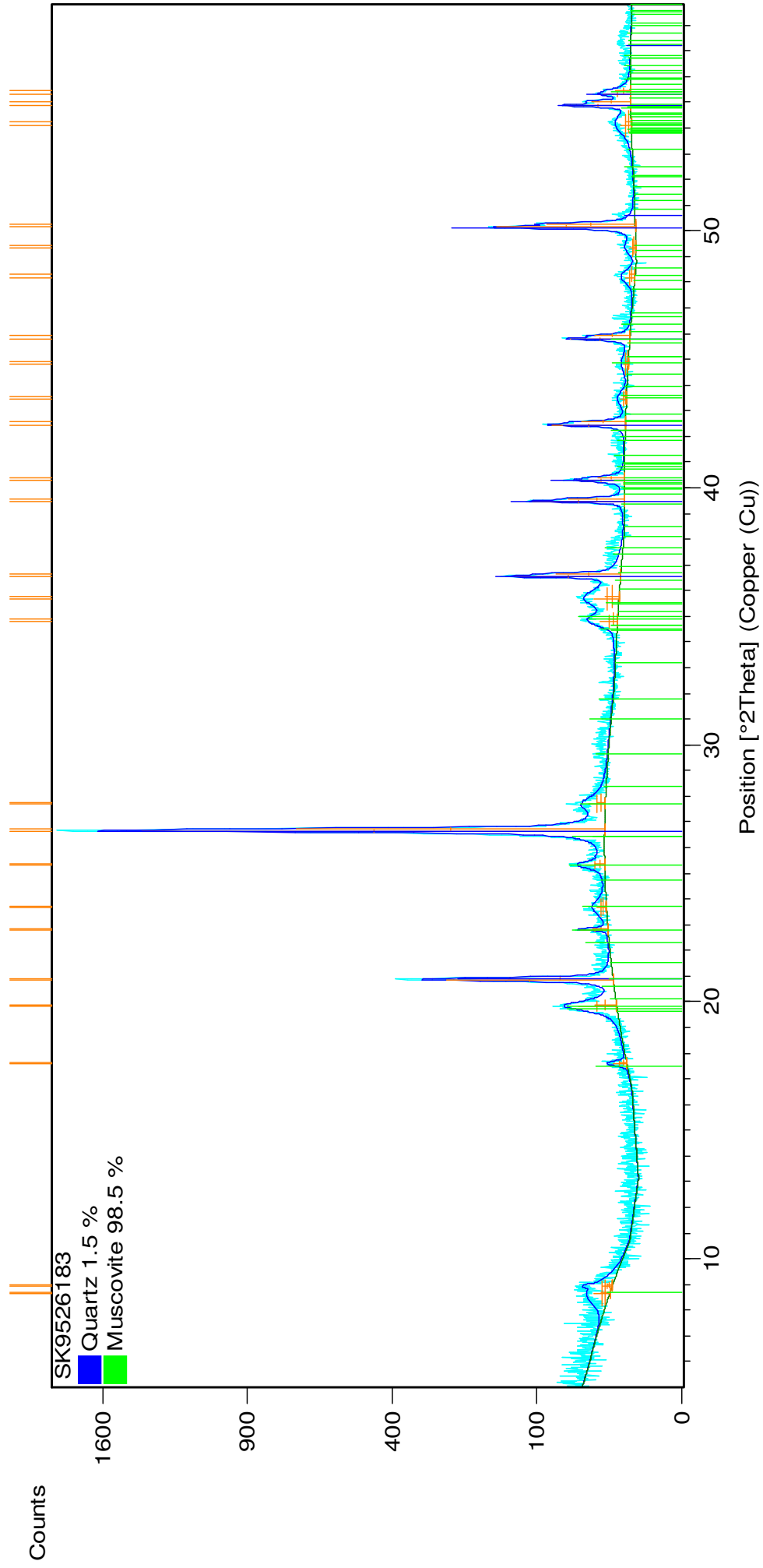
96-900-5385; K3.76 Na0.12 Al9.72 Mg0.16 Fe1.36 Si12.96 O47.52 F0.48 H7.52; Phengite

00-010-0357; (Na, K) (Si3 Al) O8; Sandline, potassian, disordered, syn



Peak List

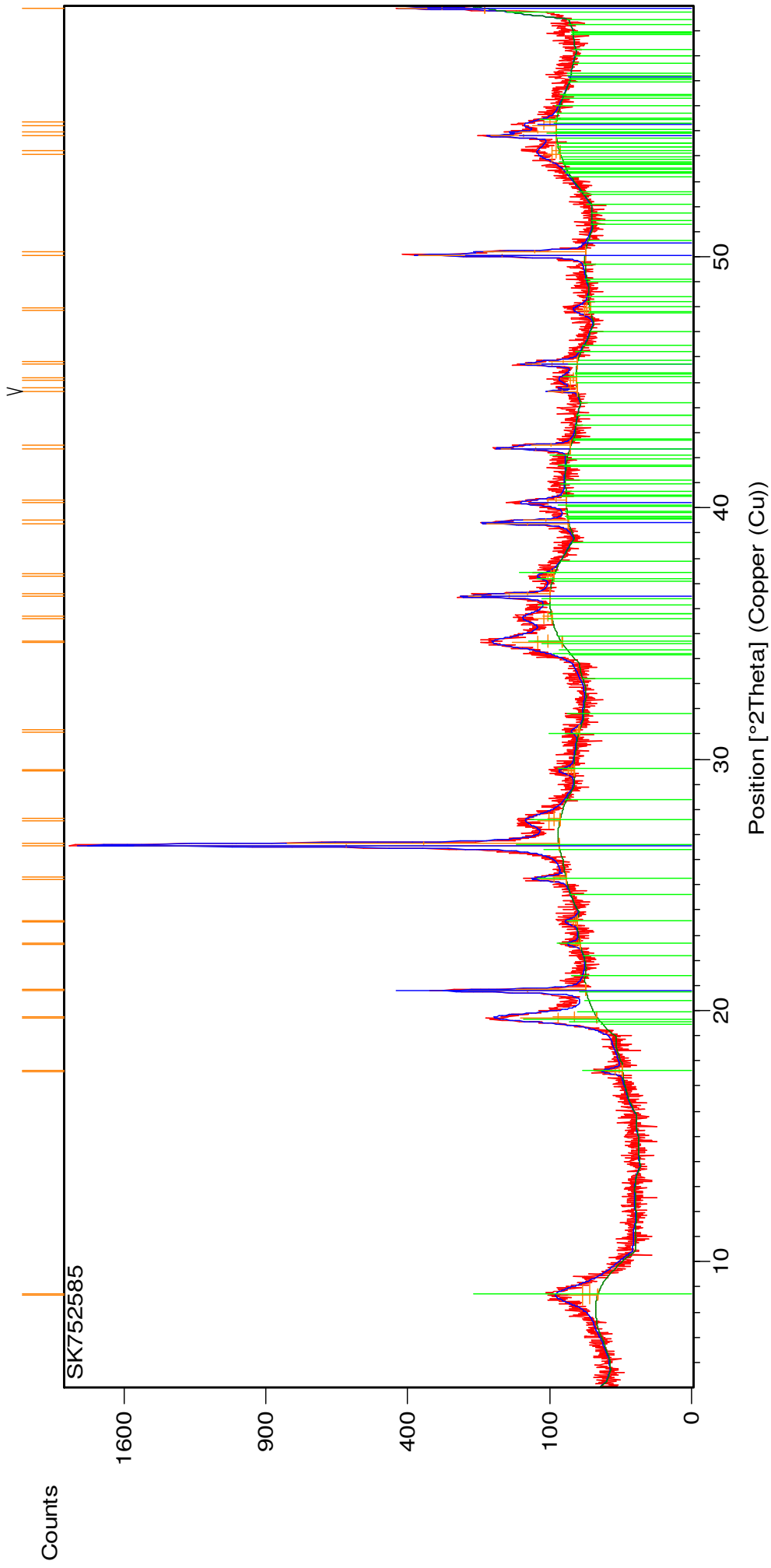
01-083-0539; Quartz
00-043-0685; Illite-2\ITM\RG#2 [NR]
01-087-1165; Hematite
01-071-1167; Anatase



Peak List

96-900-9667; Si3.00 O6.00; Quartz

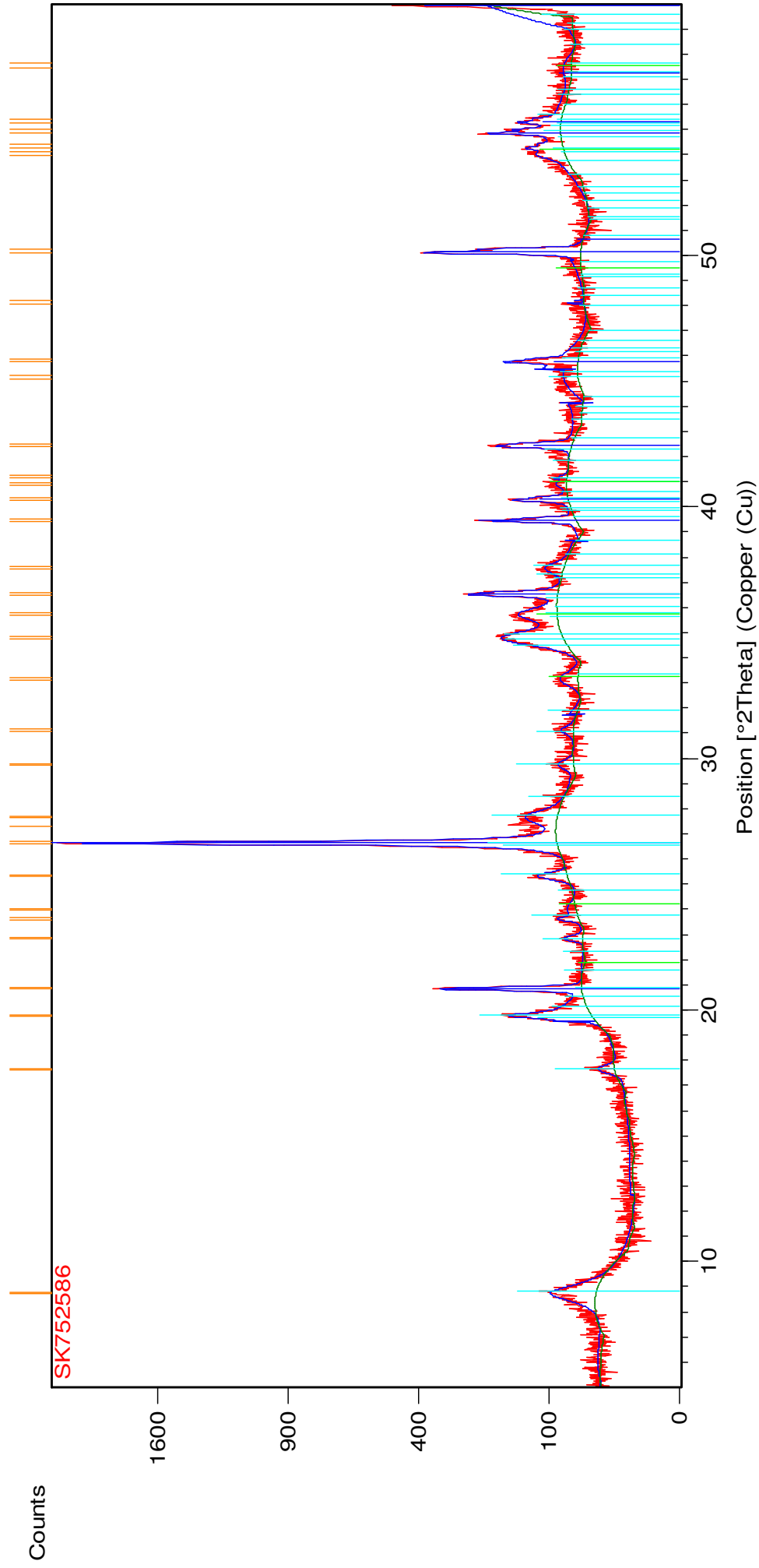
96-900-1059; K4.00 Al11.63 Si12.37 O40.00; Muscovite



Peak List

01-086-1560; Si O2; Quartz

96-900-5489; K1.90 Na0.10 Al9.12 Mg0.80 Fe1.12 Si12.96 O47.84 F0.16 H7.84; Phengite

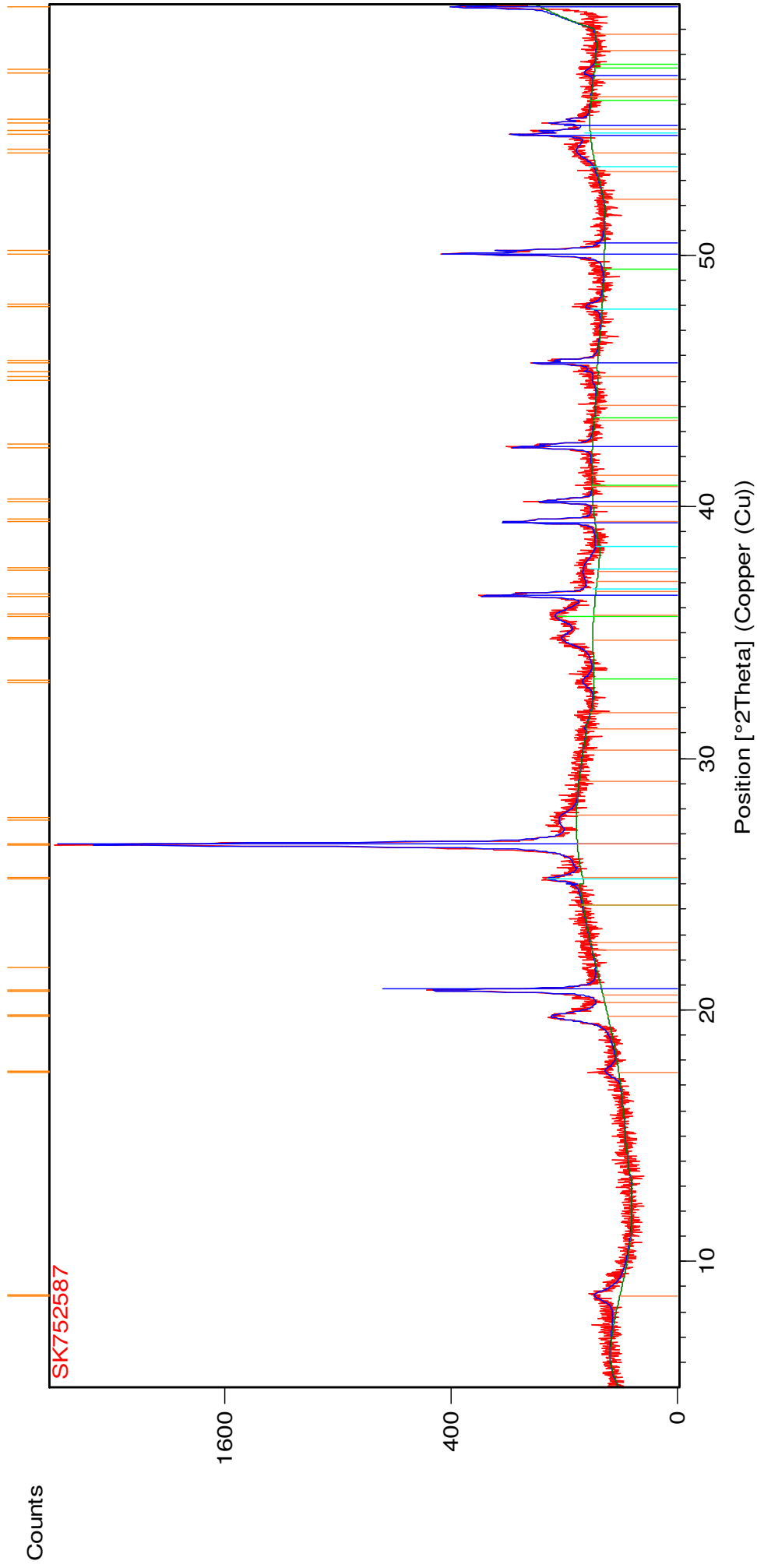


Peak List

01-085-0798; Quartz

01-070-8754; Illite

00-002-0919; Hematite



Peak List

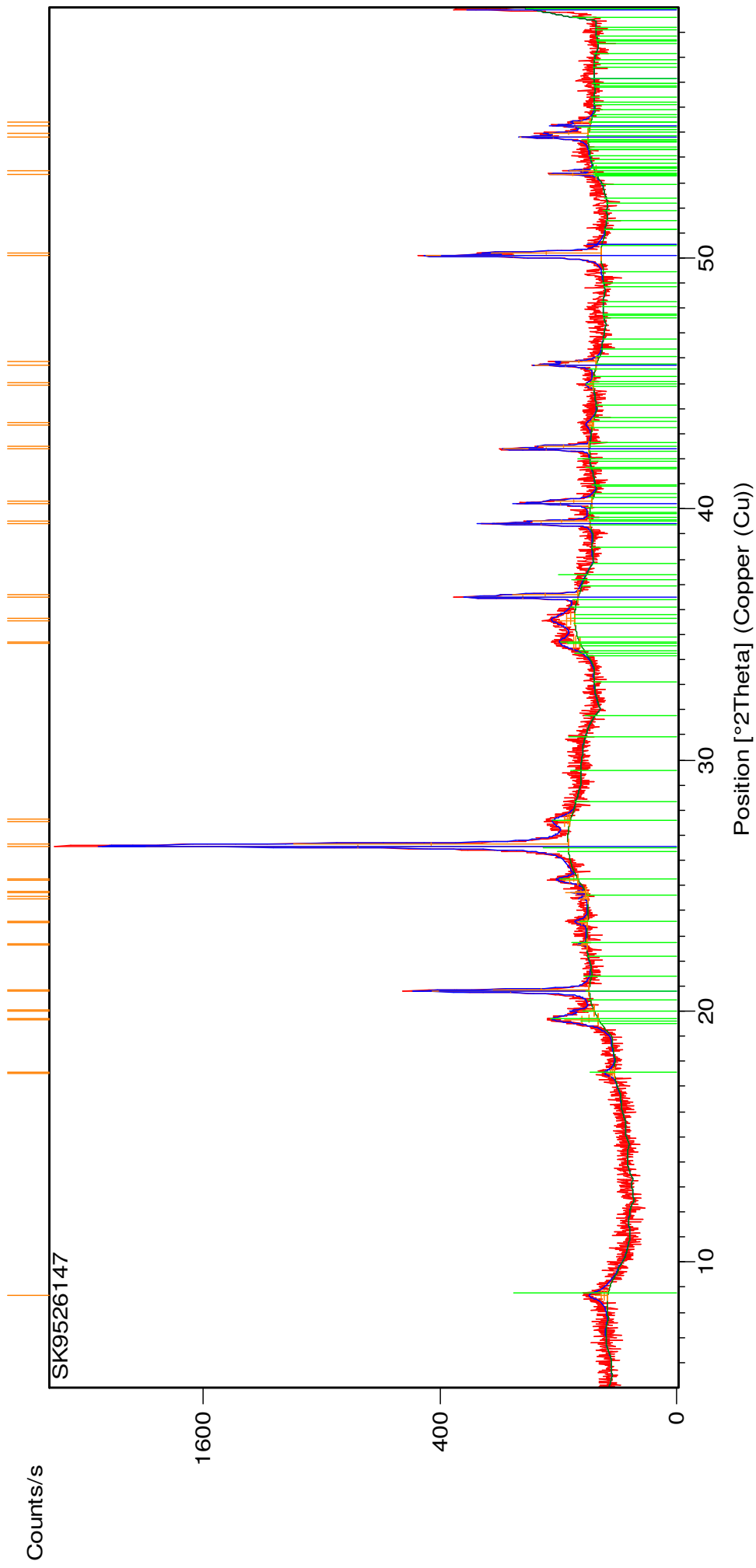
01-070-2517; Quartz low - theoretical

01-073-0603; Hematite, syn

01-071-1168; Anatase

00-043-0685; Illite-2\ITMARG#2 [NR]

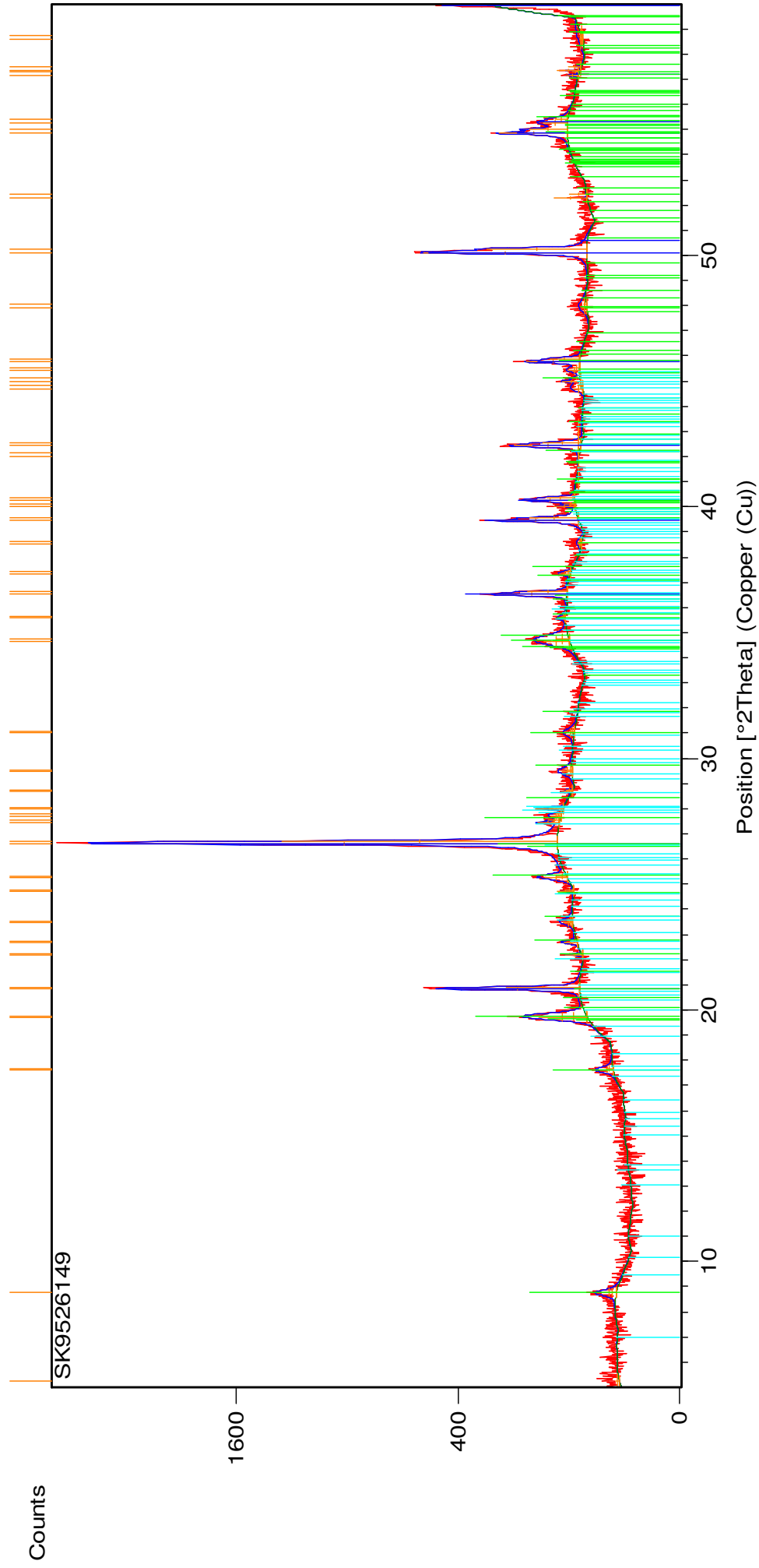
## Beilage 2: XRD-Diagramme Erdwerk Kobern-Gondorf (KGE)



Peak List

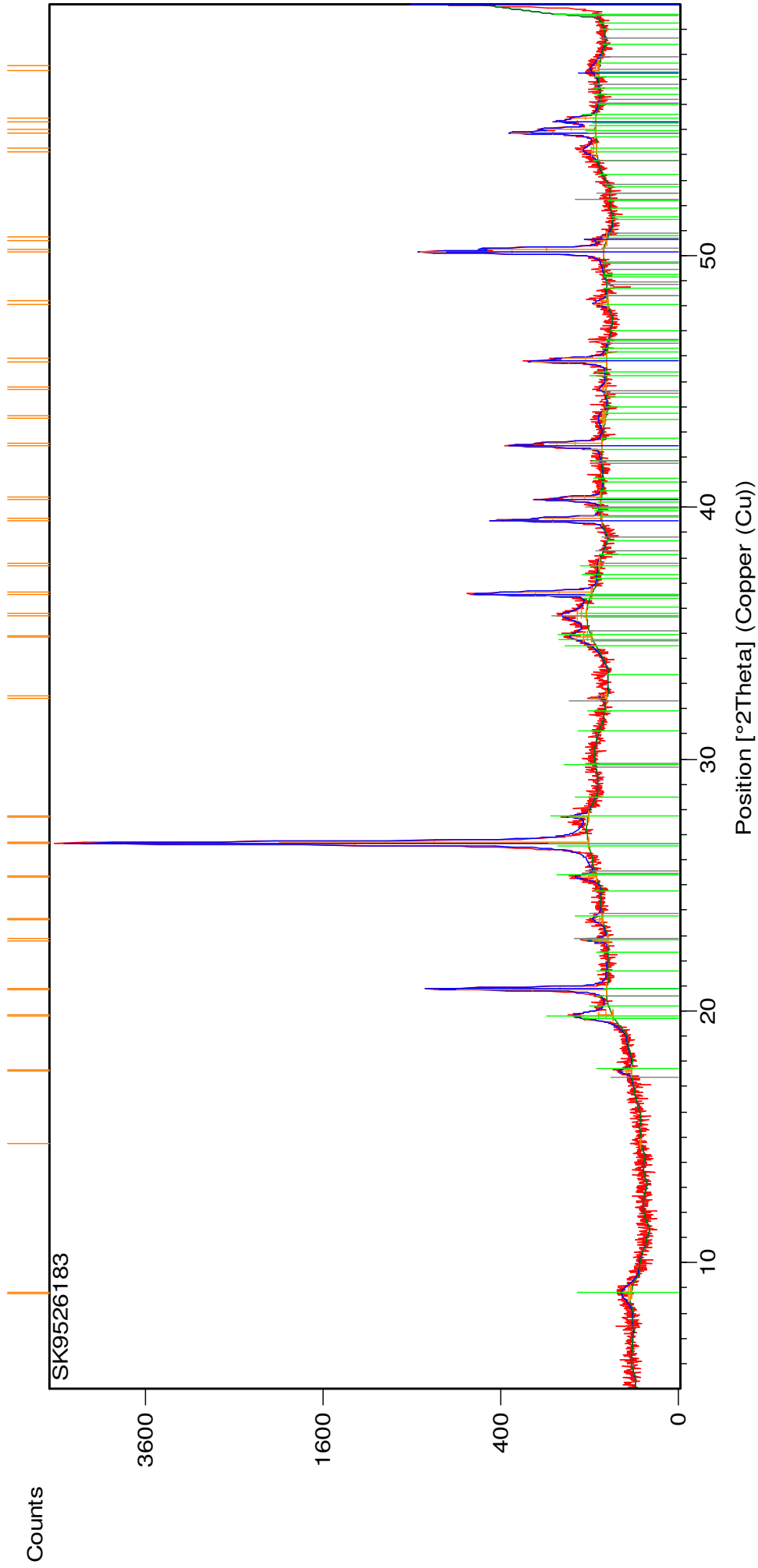
96-101-1098; Si3.00 O6.00; Quartz low

96-900-5496; K1.90 Na0.10 Al9.12 Mg0.80 Fe1.12 Si12.96 O47.84 F0.16 H7.84; Phengite



Peak List

96-900-9667; Si3.00 O6.00; Quartz
96-900-9666; K4.00 Al16.00 Si8.00 O48.00; Illite
01-089-1460; Ca ( Al2 Si2 O8 ); Anorthite

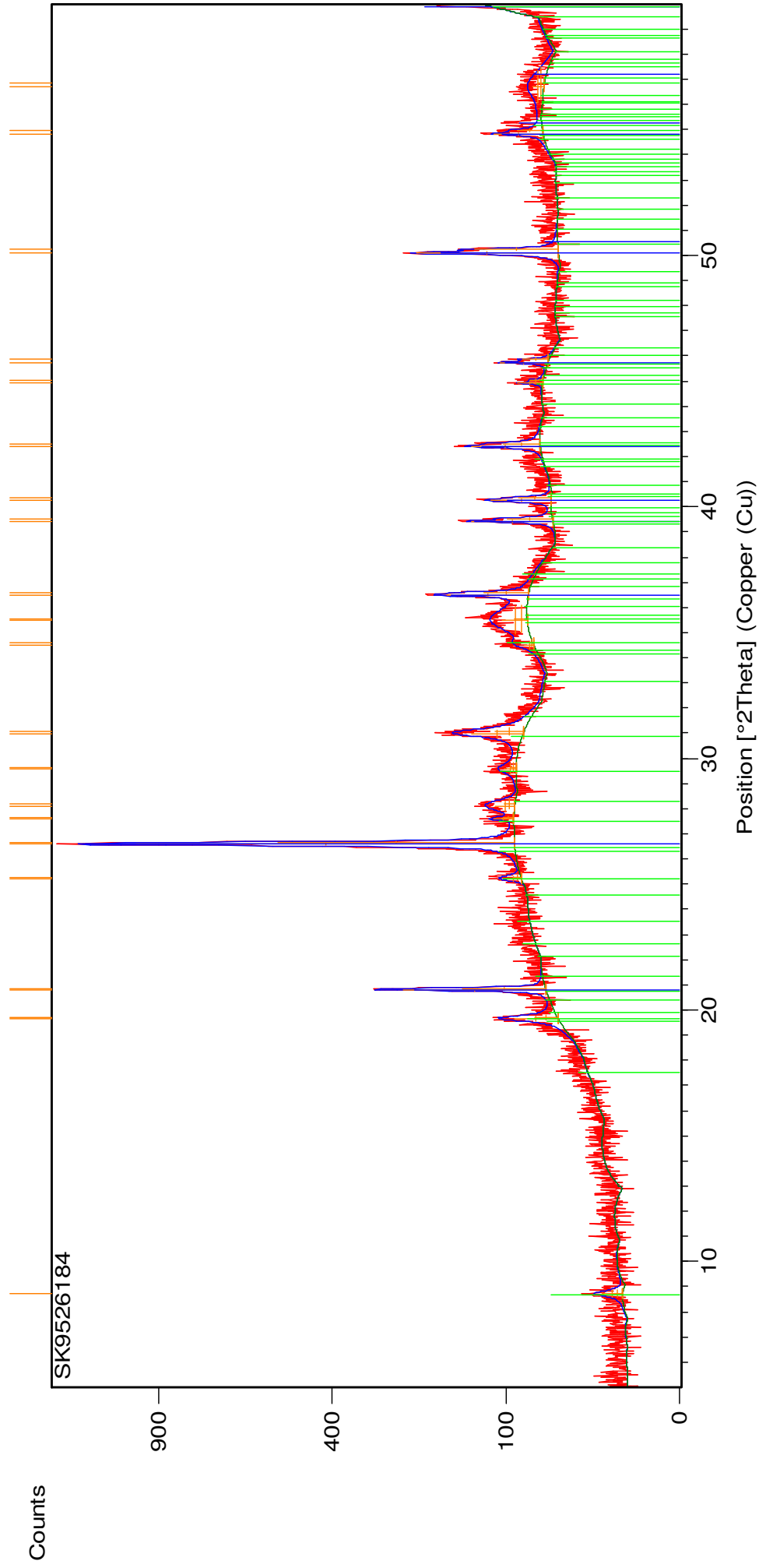


Peak List

00-046-1045; Si O2; Quartz, syn

01-070-8754; K ( Al4 Si2 O9 ( OH )3 ); Illite

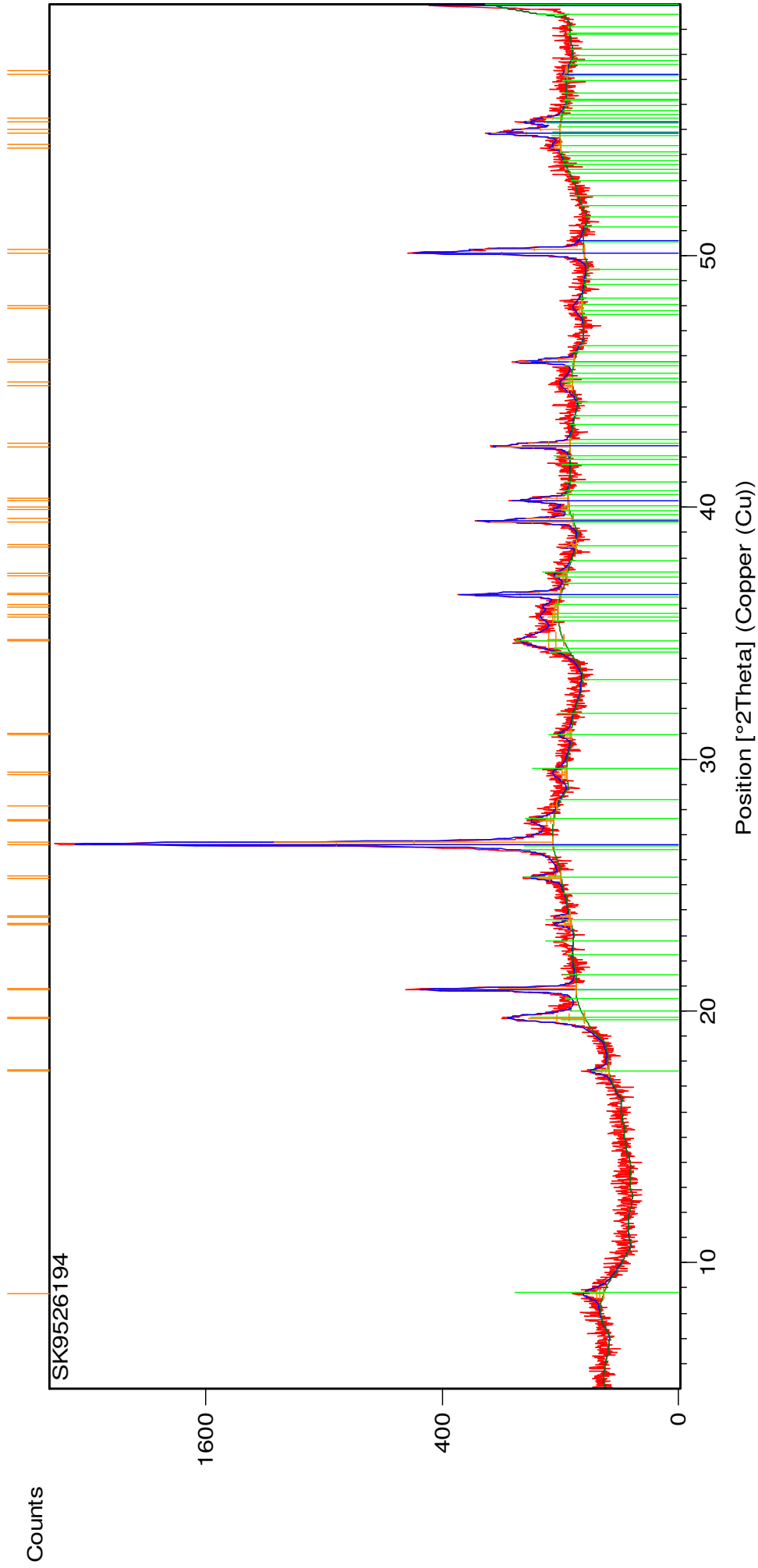
01-079-1195; Mg1.8 Fe.2 ( Si O4 ); Olivine



Peak List

00-046-1045; Si O<sub>2</sub>; Quartz, syn

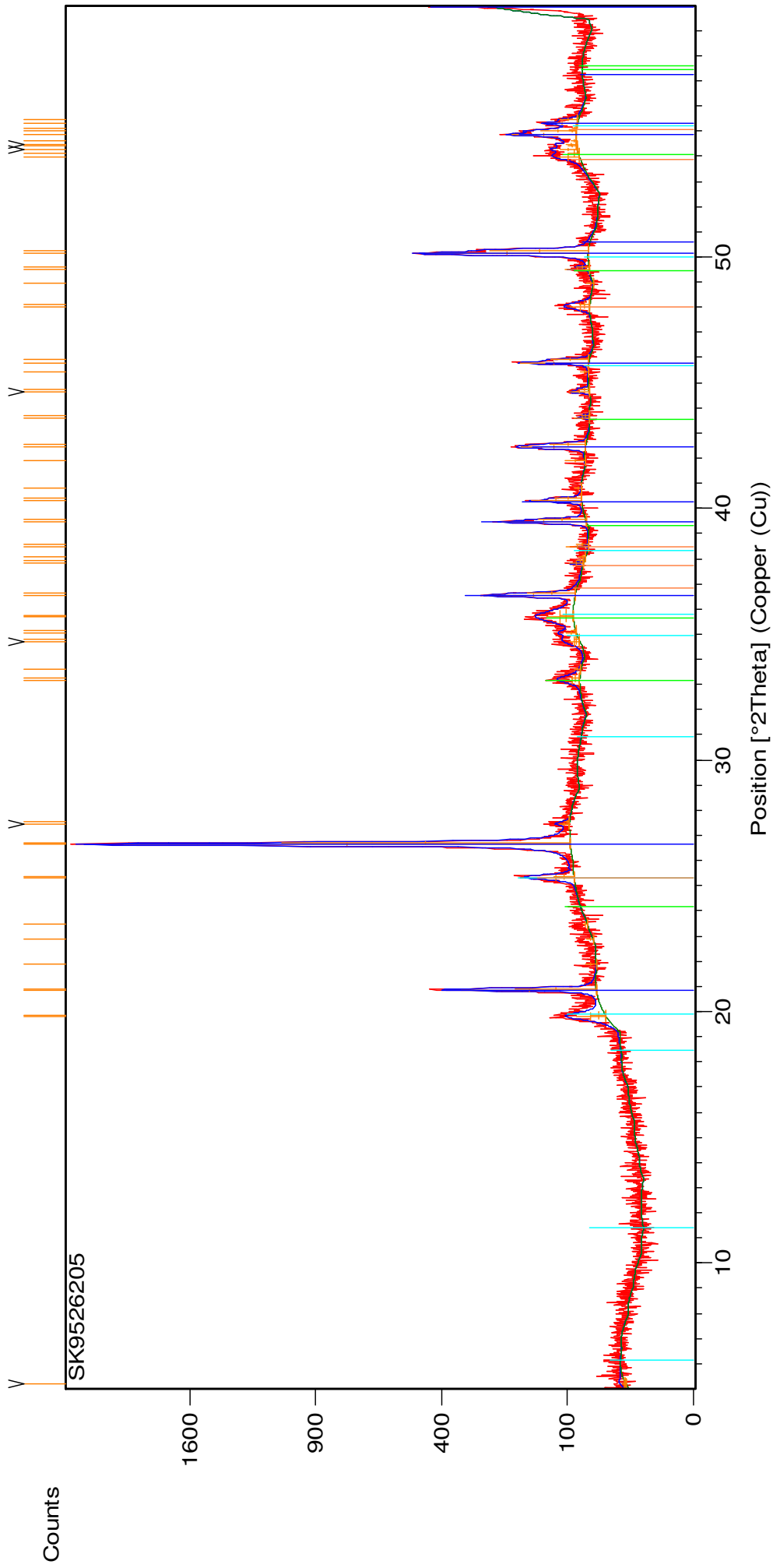
01-089-7537; K ( Al , Fe )<sub>2</sub> Al Si<sub>3</sub> O<sub>10</sub> ( OH )<sub>2</sub>; Phengite 2M1, Fe-rich, heated



Peak List

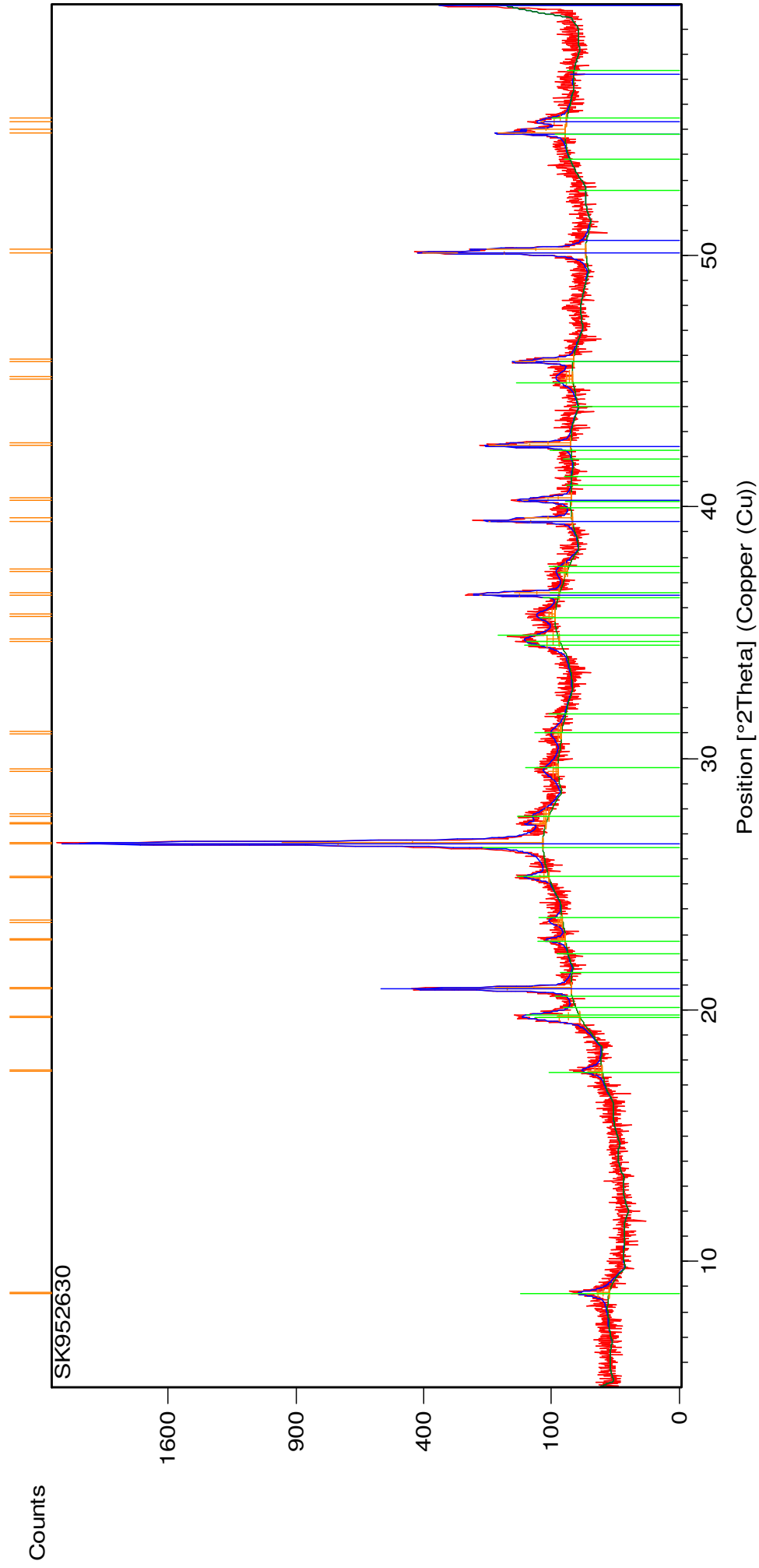
96-500-0036; Si3.00 O6.00; Quartz

01-089-7537; K ( Al , Fe )2 Al Si3 O10 ( O H )2; Phengite 2M1, Fe-rich, heated



Peak List

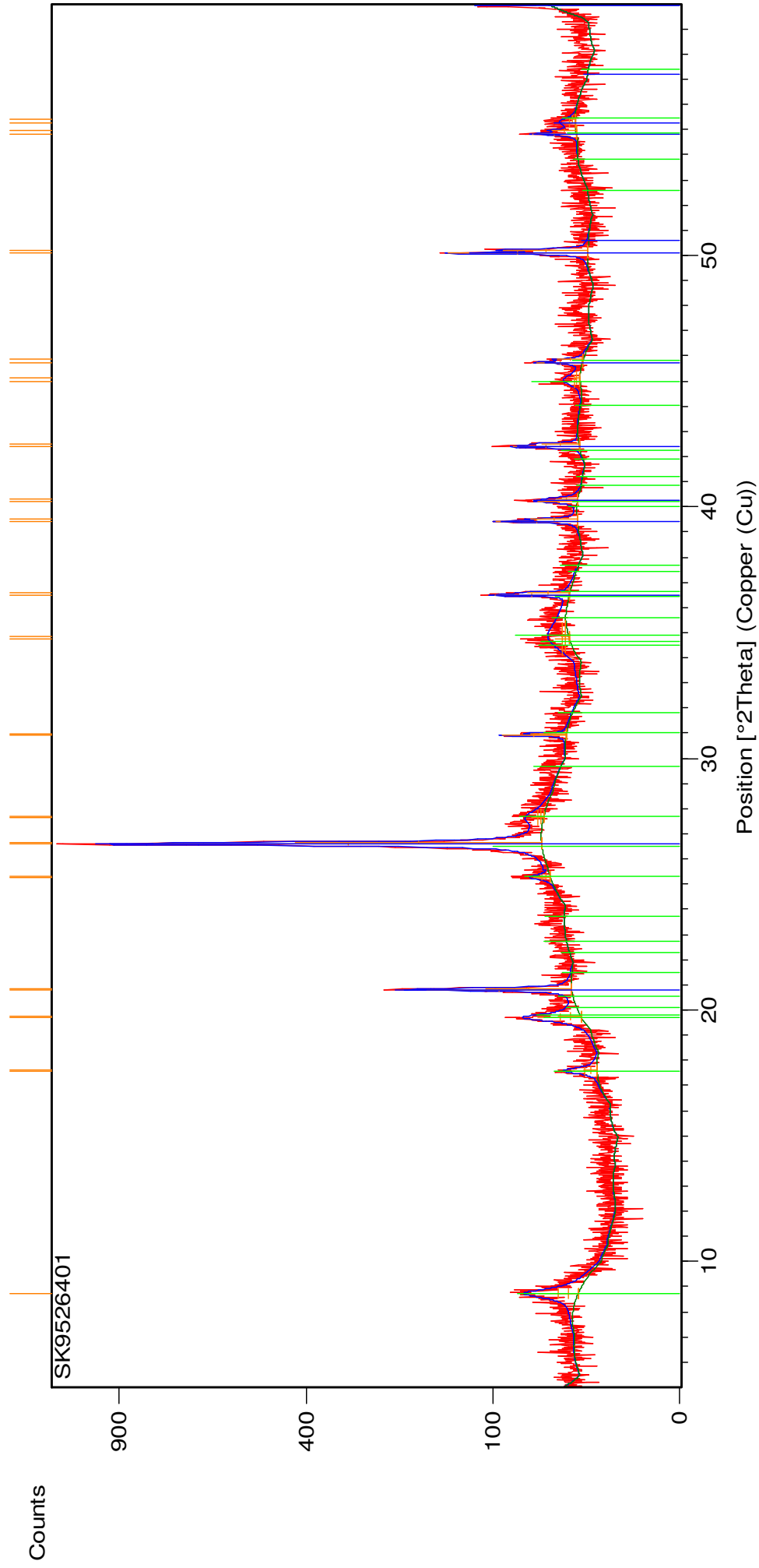
96-901-2601; Si3.00 O6.00; Quartz	
01-085-0599; Fe2 O3; Hematite	
00-039-0381; Na0.5 Al6 ( Si , Al )8 O20 ( O H )10 ! H2 O; Chlorite-vermiculite-montmorillonite	
00-004-0477; Ti O2; Anatase, syn	



Peak List

01-086-1560; Si O<sub>2</sub>; Quartz

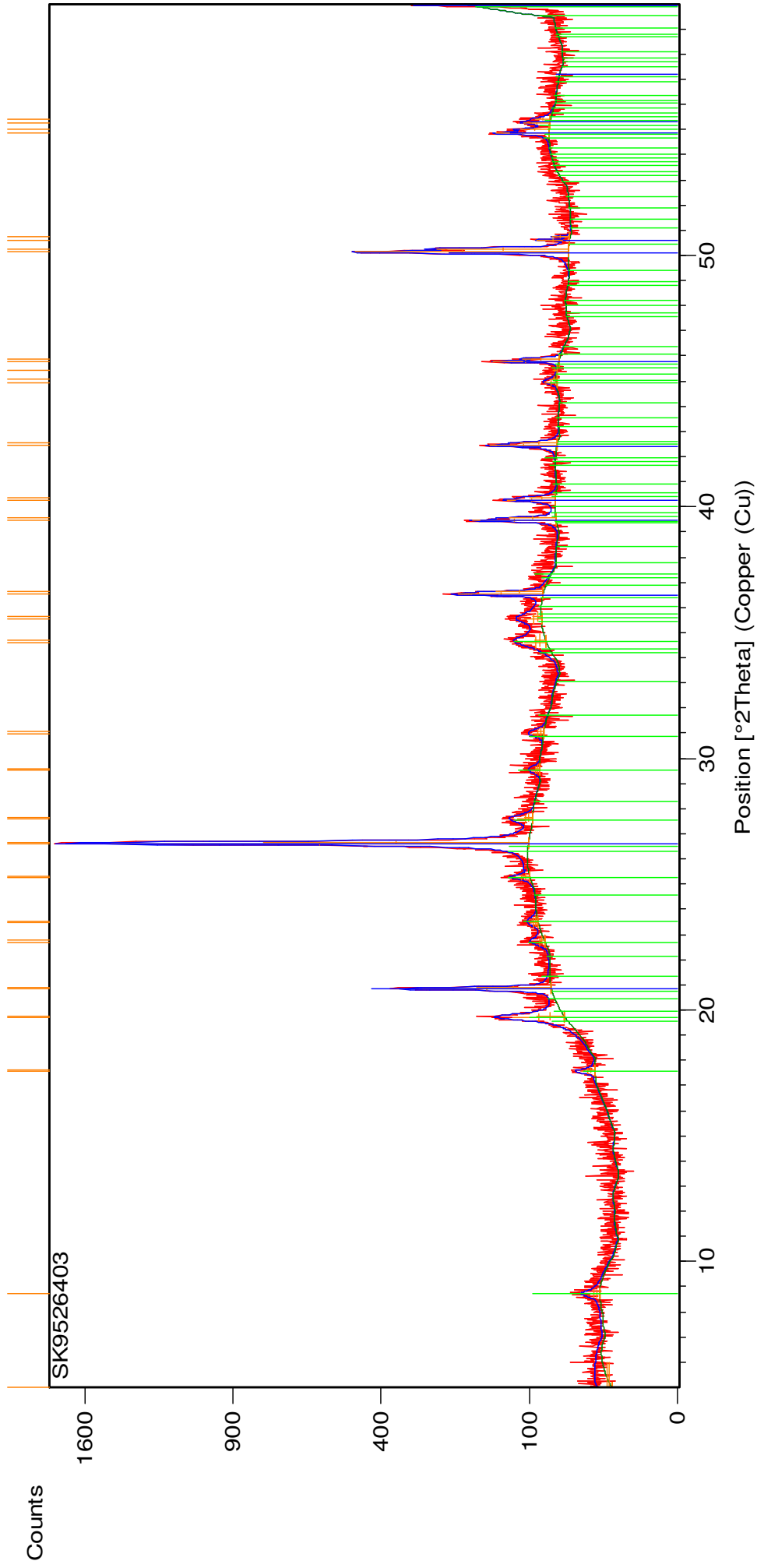
00-007-0032; K Al<sub>2</sub> Si<sub>3</sub> Al O<sub>10</sub> (OH)<sub>2</sub>; Muscovite 2M<sub>1</sub>, syn



Peak List

01-085-0335; Si O<sub>2</sub>; Quartz low, syn

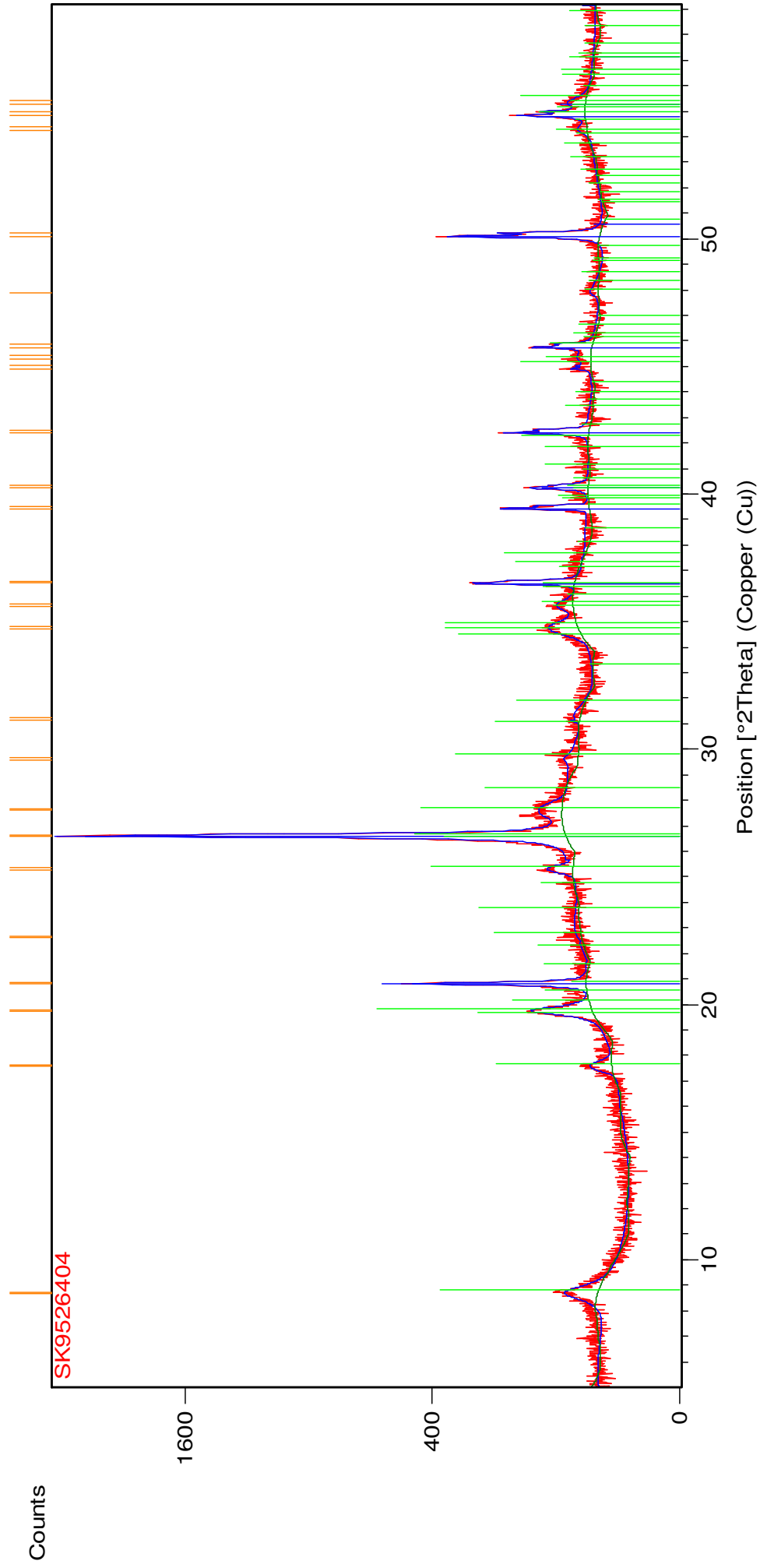
00-007-0032; K Al<sub>2</sub> Si<sub>3</sub> Al O<sub>10</sub> (OH)<sub>2</sub>; Muscovite 2M<sub>1</sub>, syn



Peak List

01-086-1560; Si O<sub>2</sub>; Quartz

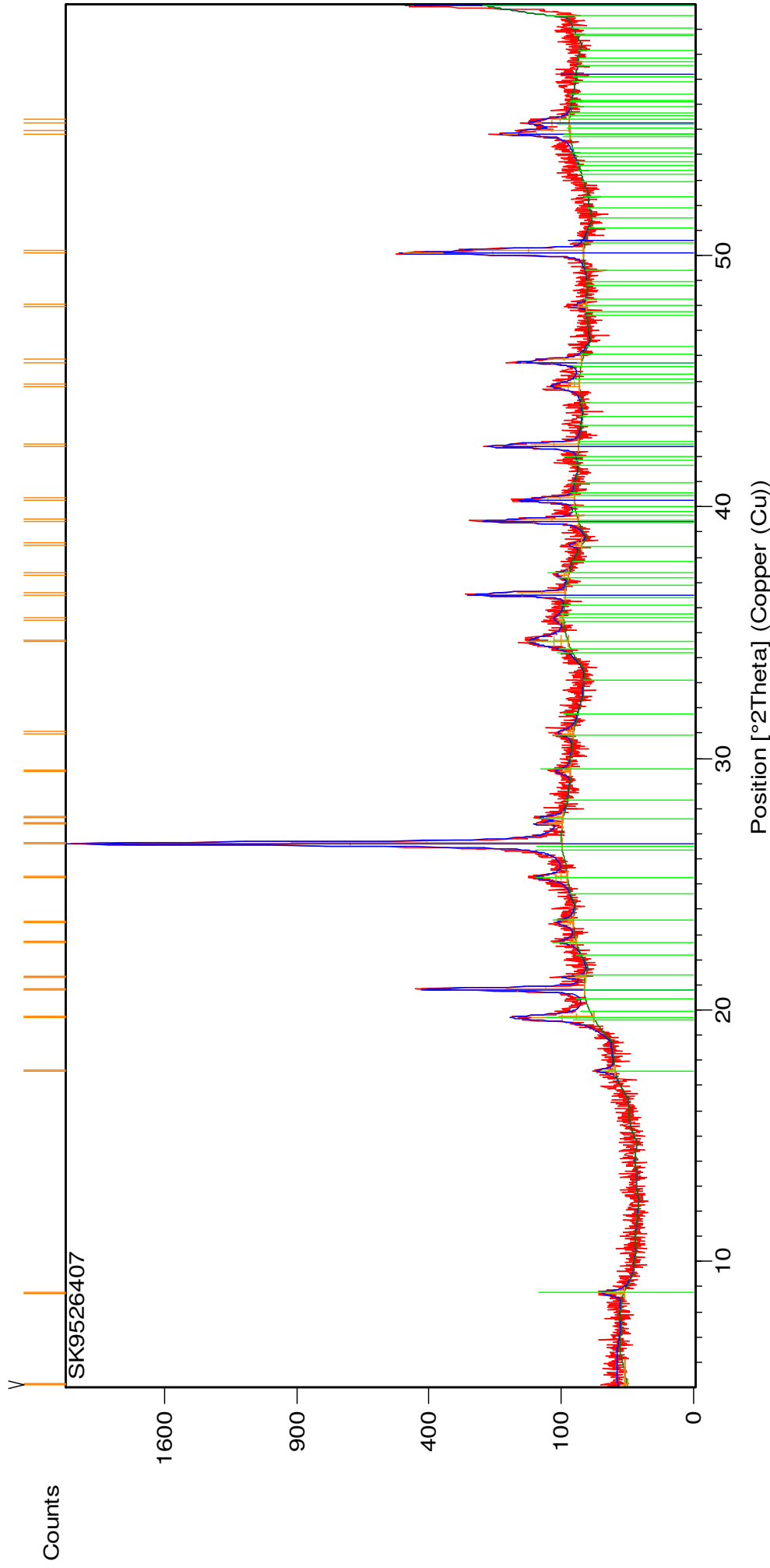
01-089-7537; K (Al, Fe)<sub>2</sub>AlSi<sub>3</sub>O<sub>10</sub>(OH)<sub>2</sub>; Phengite 2M1, Fe-rich, heated



Peak List

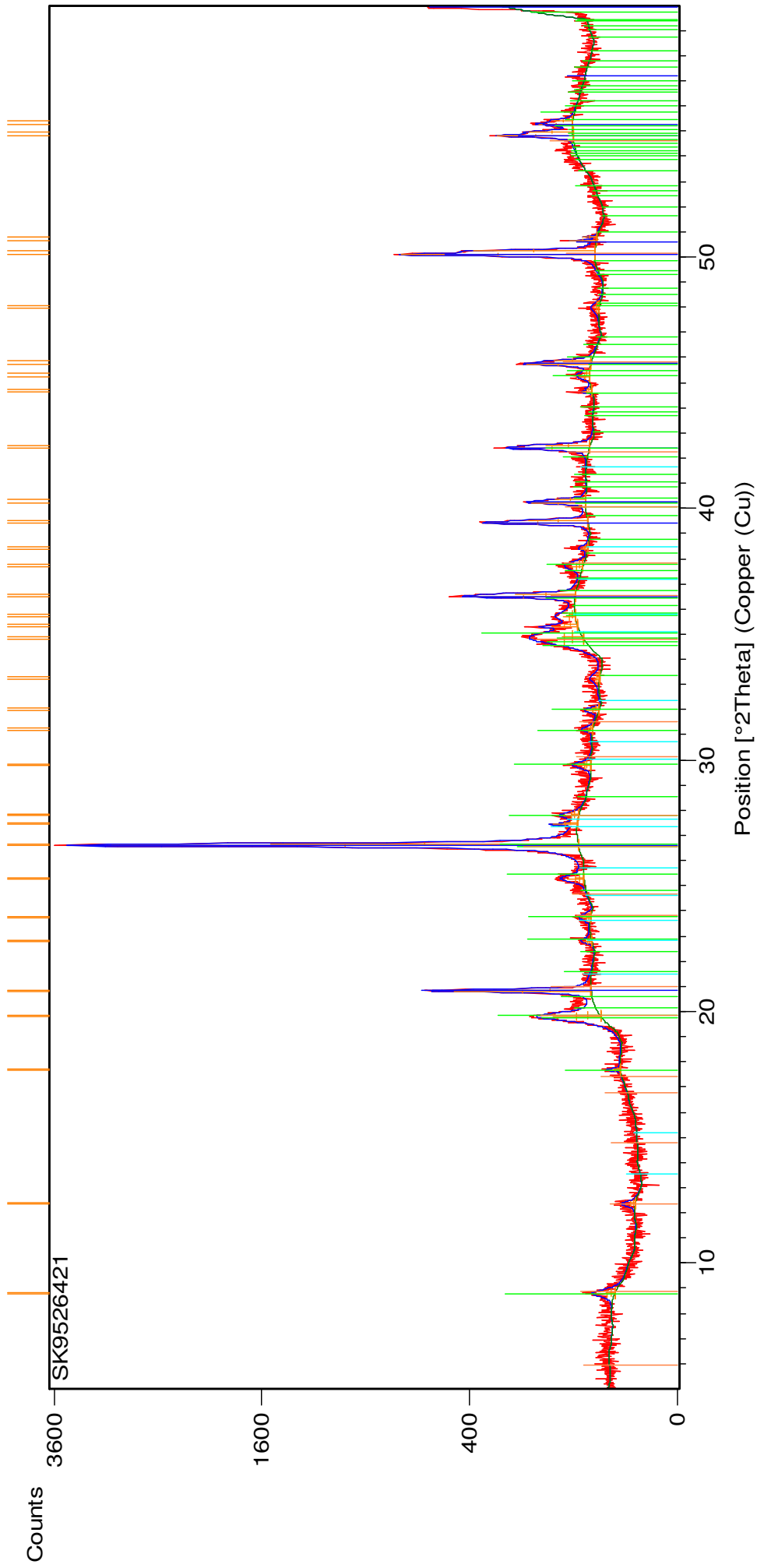
01-089-8935; Quartz \$GA

01-070-3754; Illite



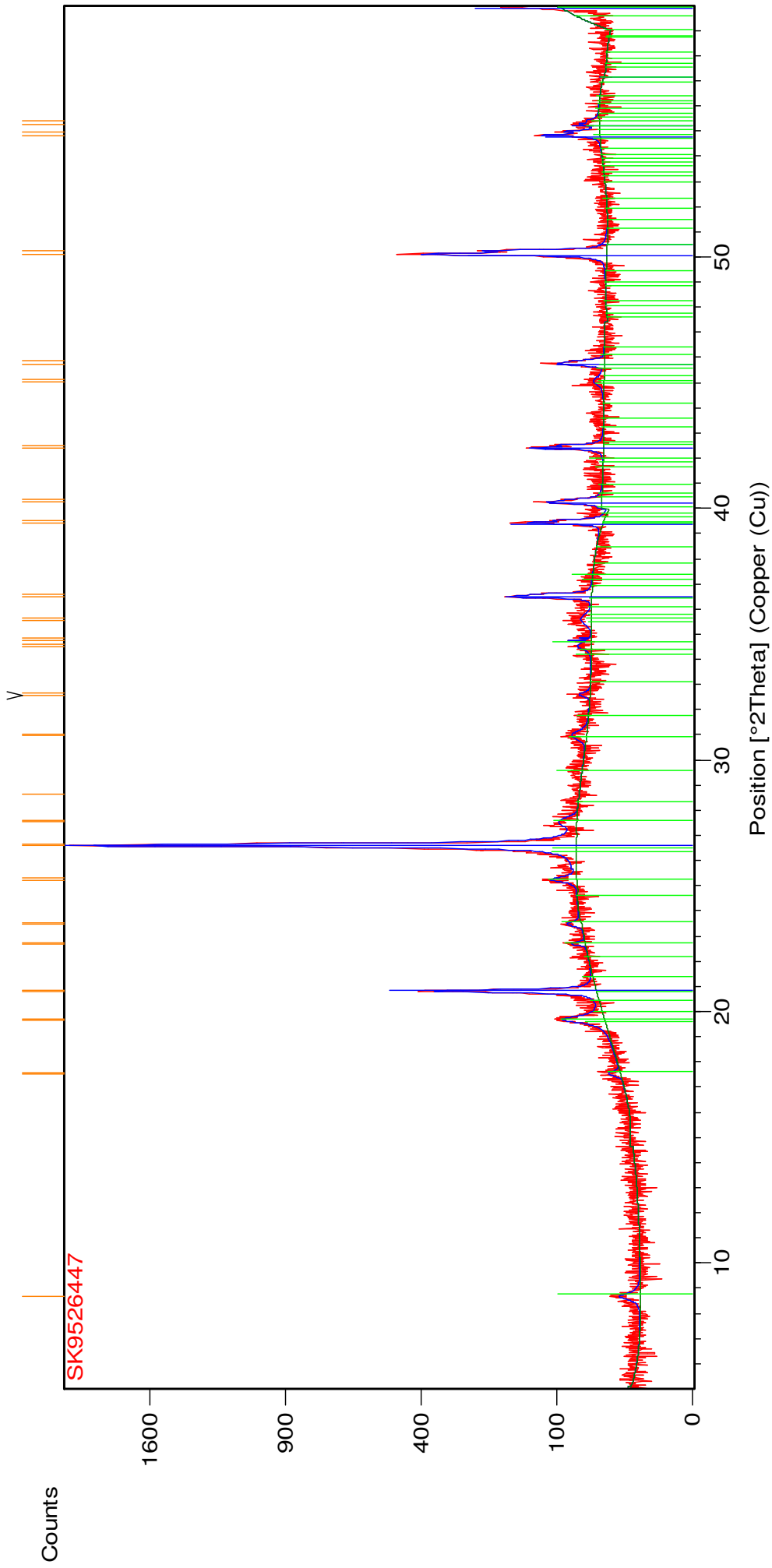
Peak List

00-046-1045; Si O <sub>2</sub> ; Quartz, syn
01-089-7537; K ( Al , Fe ) <sub>2</sub> Al Si <sub>3</sub> O <sub>10</sub> ( OH ) <sub>2</sub> ; Phengite 2M1, Fe-rich, heated



Peak List

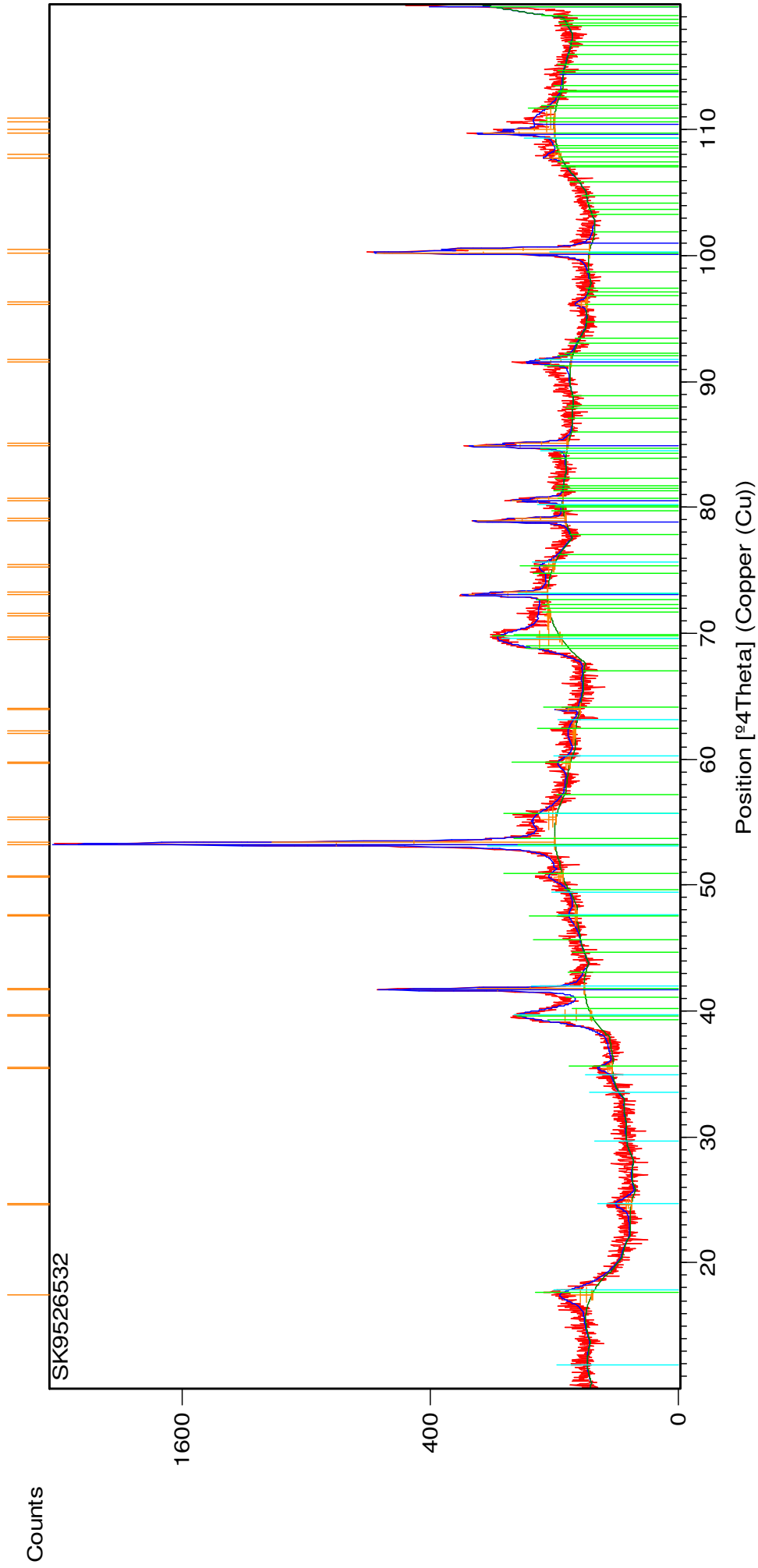
00-046-1045; Si O2; Quartz, syn
01-086-1384; K0.932 Al2 ( Al0.932 Si3.068 O10 ) ( ( O H ) 1.744 F0.256 ); Muscovite-2\ITM#1\RG
00-003-0413; Si O2 - Al2 O3 - Na - O H; Flusston
00-010-0357; ( Na, K ) ( Si3 Al ) O8; Sandline, potassian, disordered, syn



Peak List

01-083-0539; Quartz

01-089-7537; Phengite 2M1, Fe-rich, heated



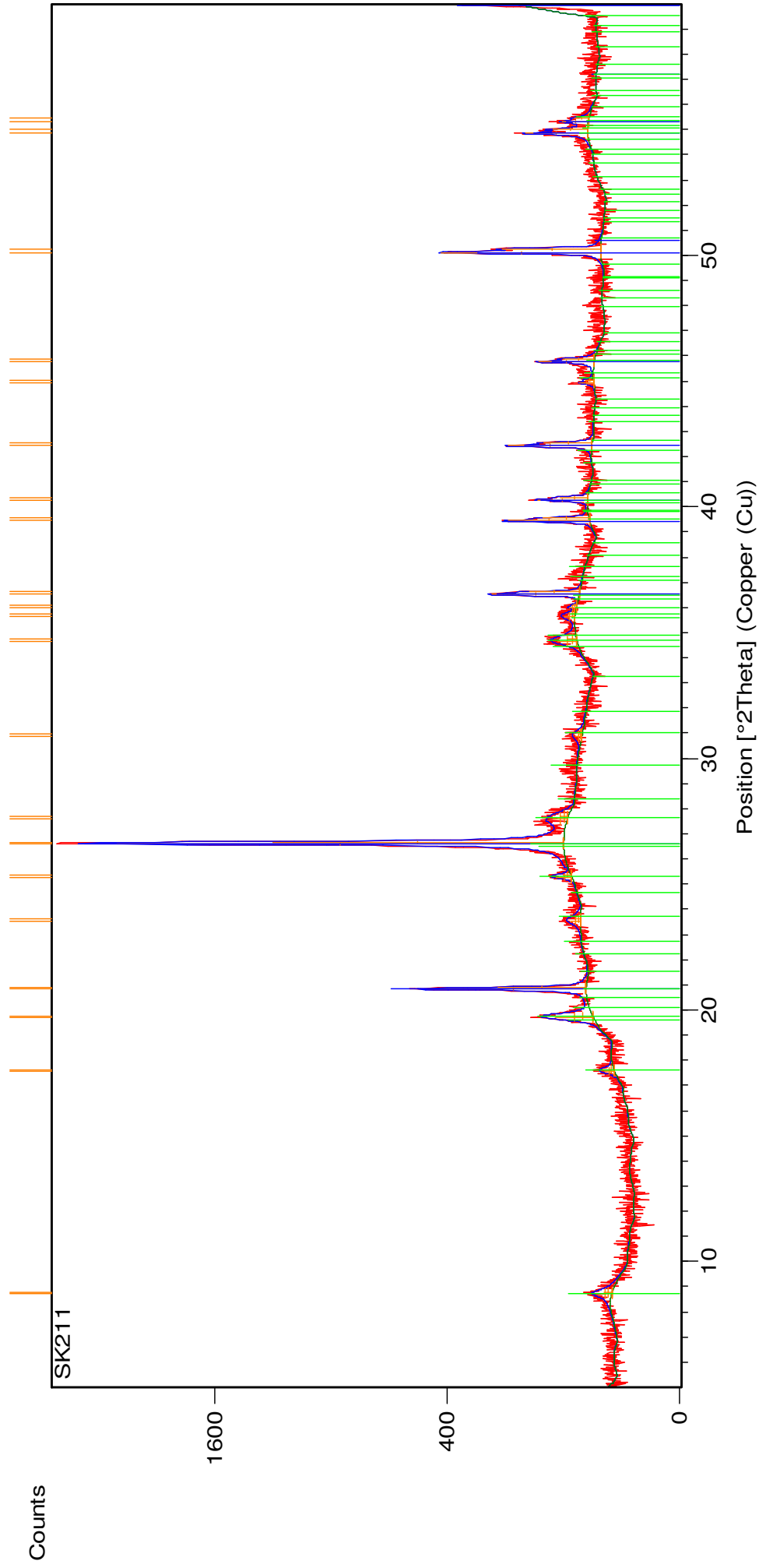
Peak List

01-070-2517; Si O2; Quartz low - theoretical

01-076-0928; K ( Al1.5 Mg.5 ) ( \$13.5 Al.5 ) O10 ( O H )2; Phengite 2\1TM\RG#1

00-003-0413; Si O2 - Al2 O3 - Na - O H; Flusston

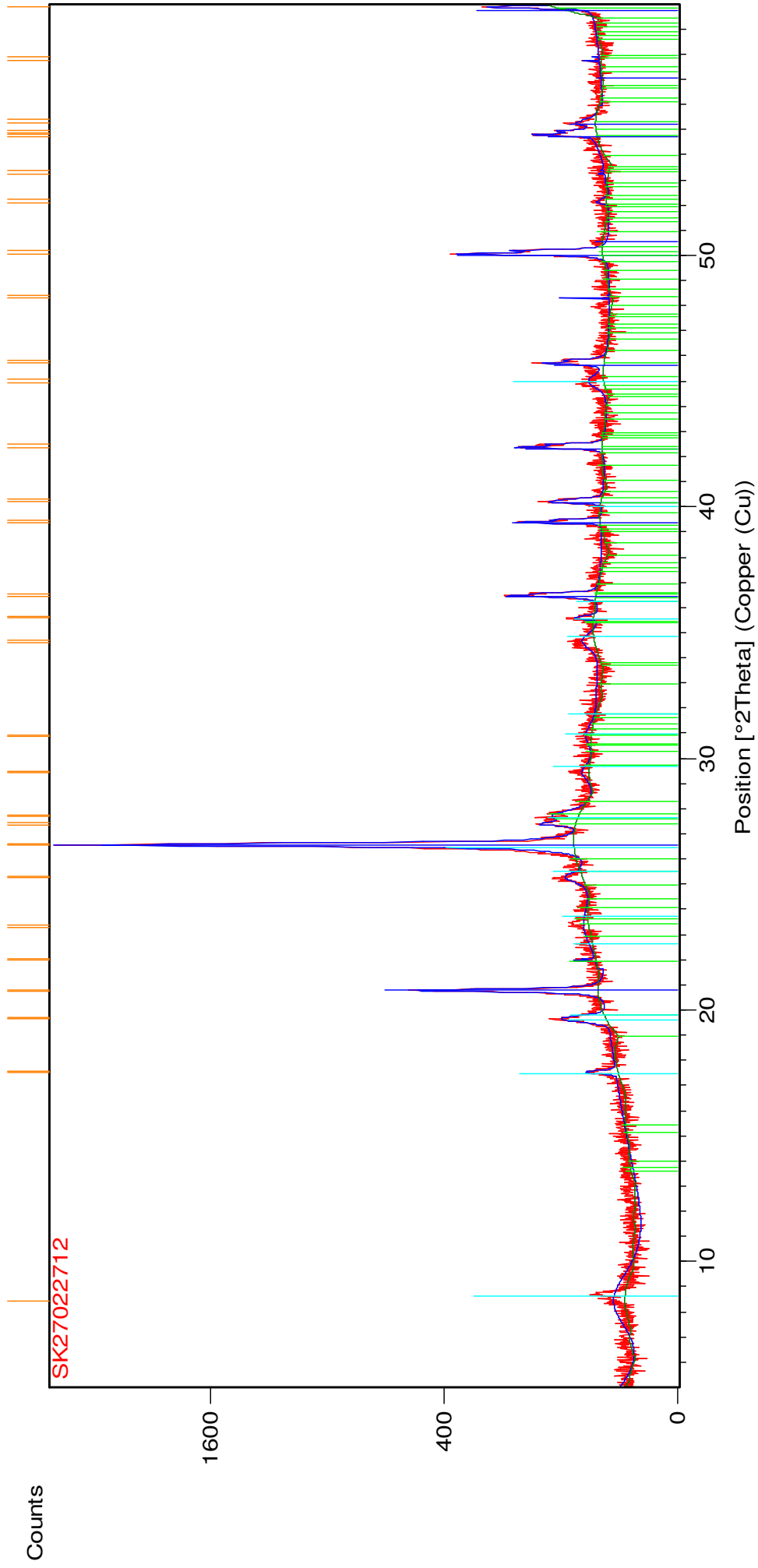
## Beilage 3: XRD-Diagramme Erdwerk Urmitz (URE)



Peak List

01-075-0443; Si O2; Quartz

01-070-3754; K (Al4 Si2 O9 (OH)3); Illite

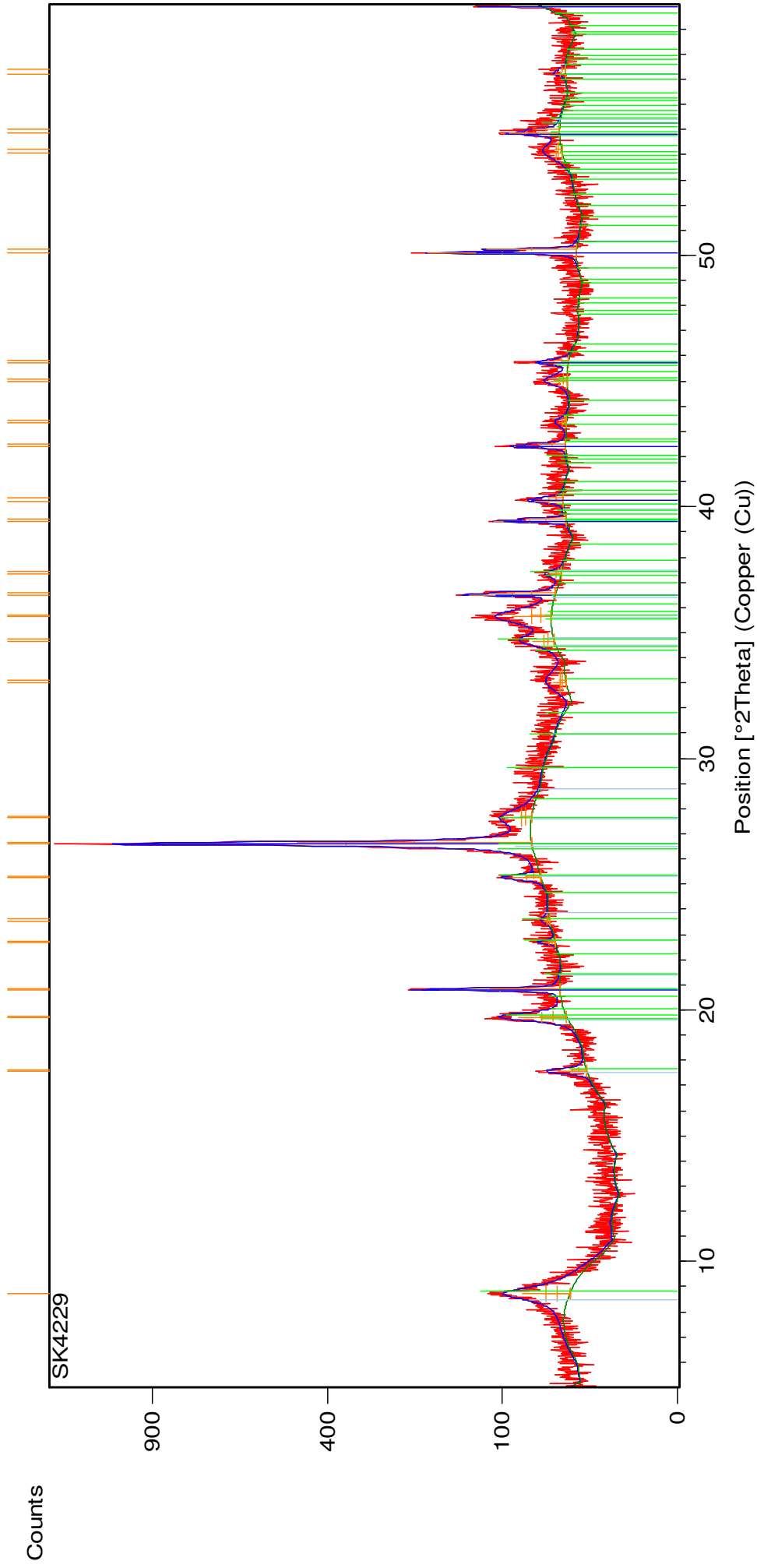


Peak List

01-089-8936; Quartz \$GA

01-083-2215; Albite high

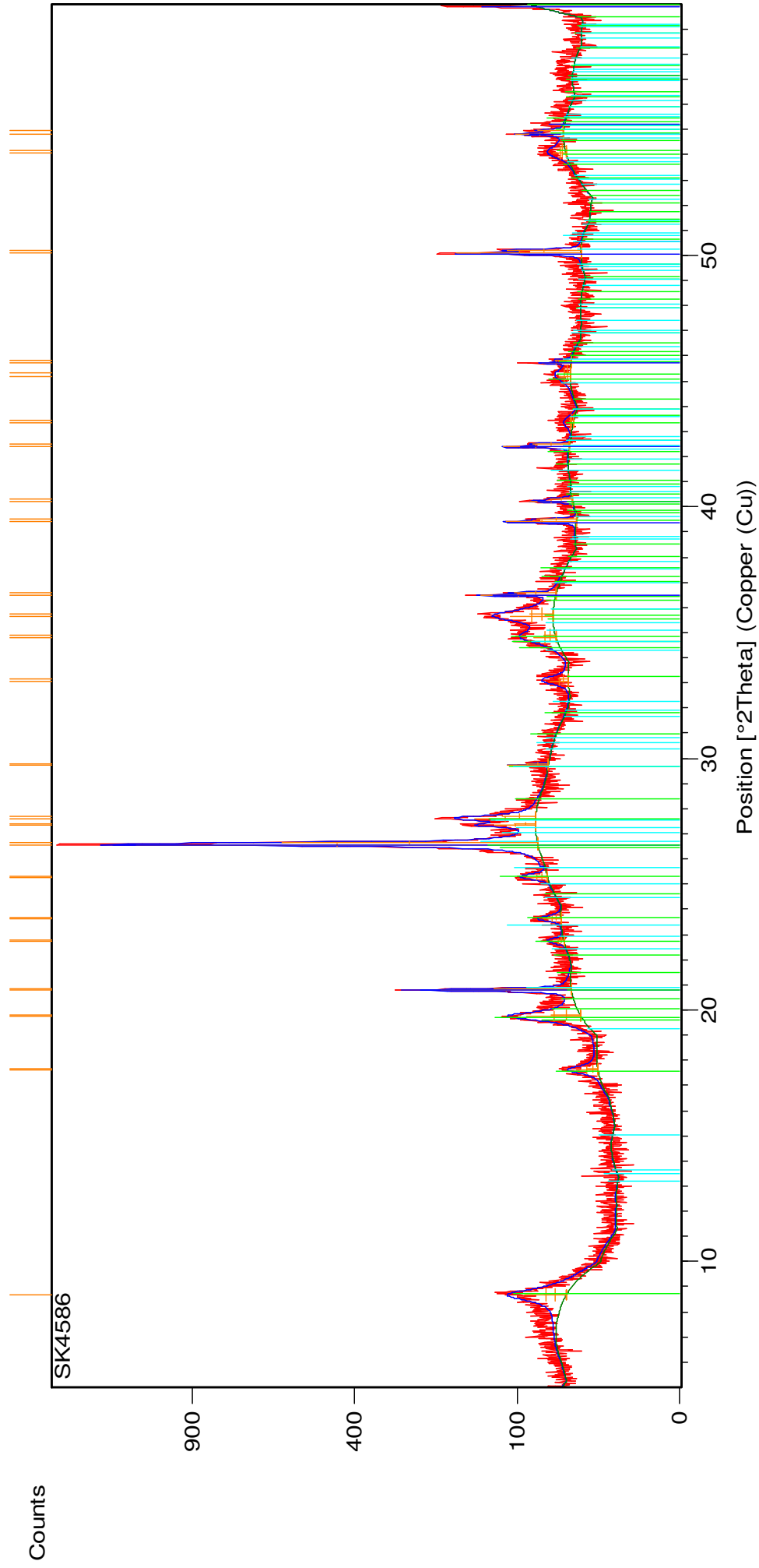
00-026-0911; Illite-2\ITMARG#1 [NR]



Peak List

01-086-1630; Si O<sub>2</sub>; Quartz

01-089-7537; K ( Al , Fe )<sub>2</sub> Al Si<sub>3</sub> O<sub>10</sub> ( OH )<sub>2</sub>; Phengite 2M1, Fe-rich, heated

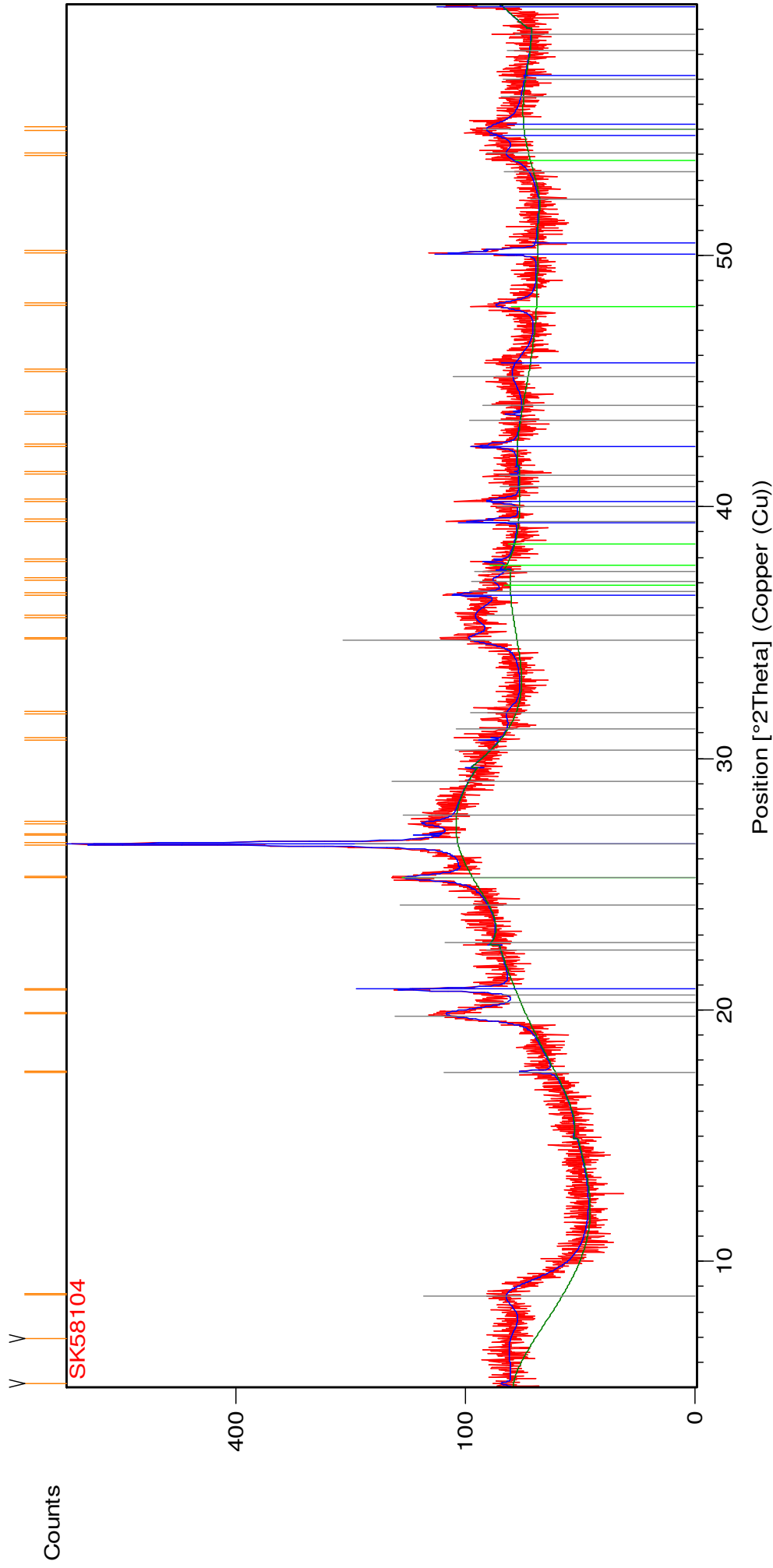


Peak List

01-070-3755; Si O2; Quartz

01-070-3754; K ( Al4 Si2 O9 ( OH )3 ); Illite

01-084-1504; K Al Si3 O8; Sanidine



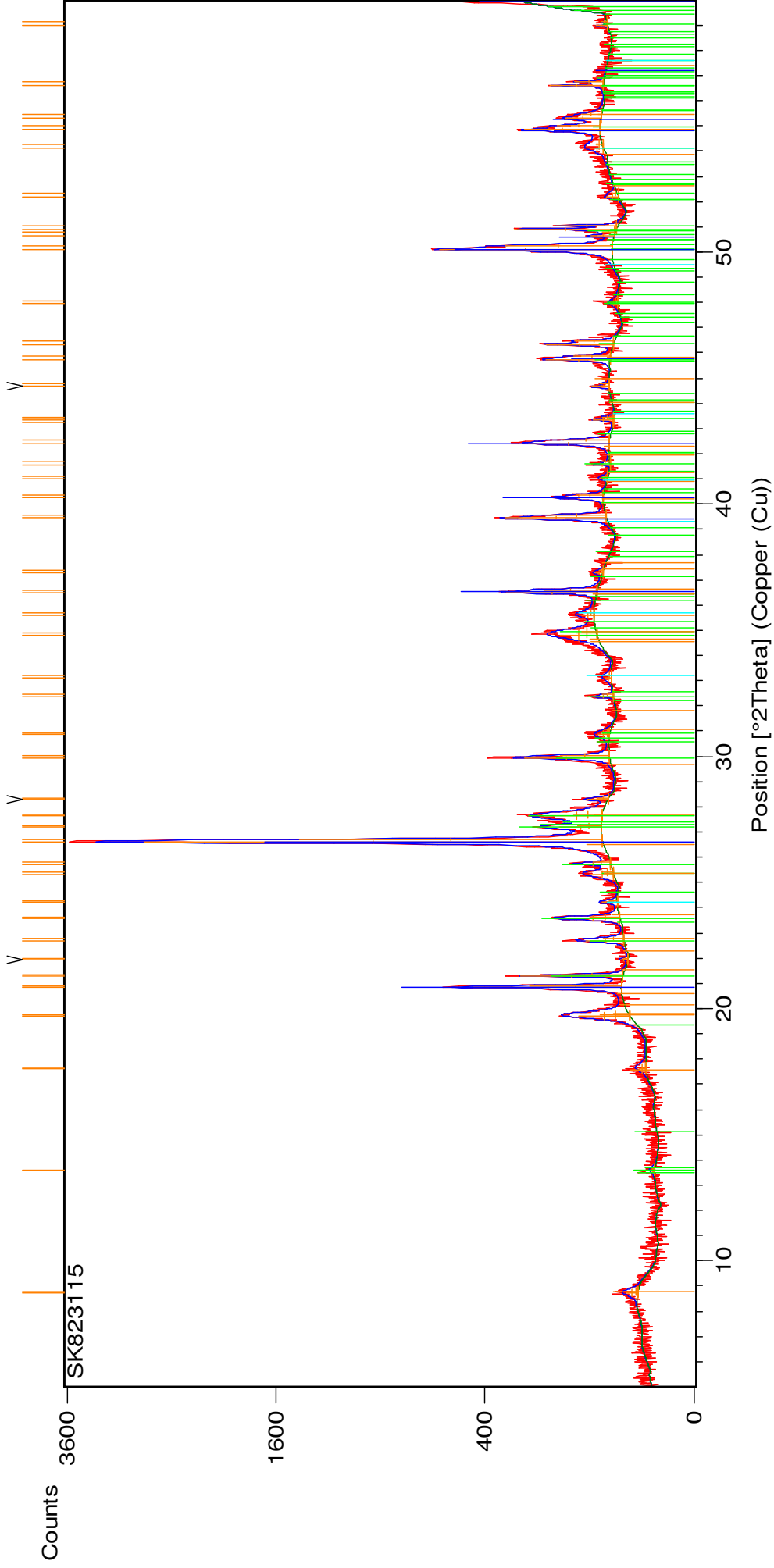
Peak List

01-083-0539; Quartz

01-071-1167; Anatase

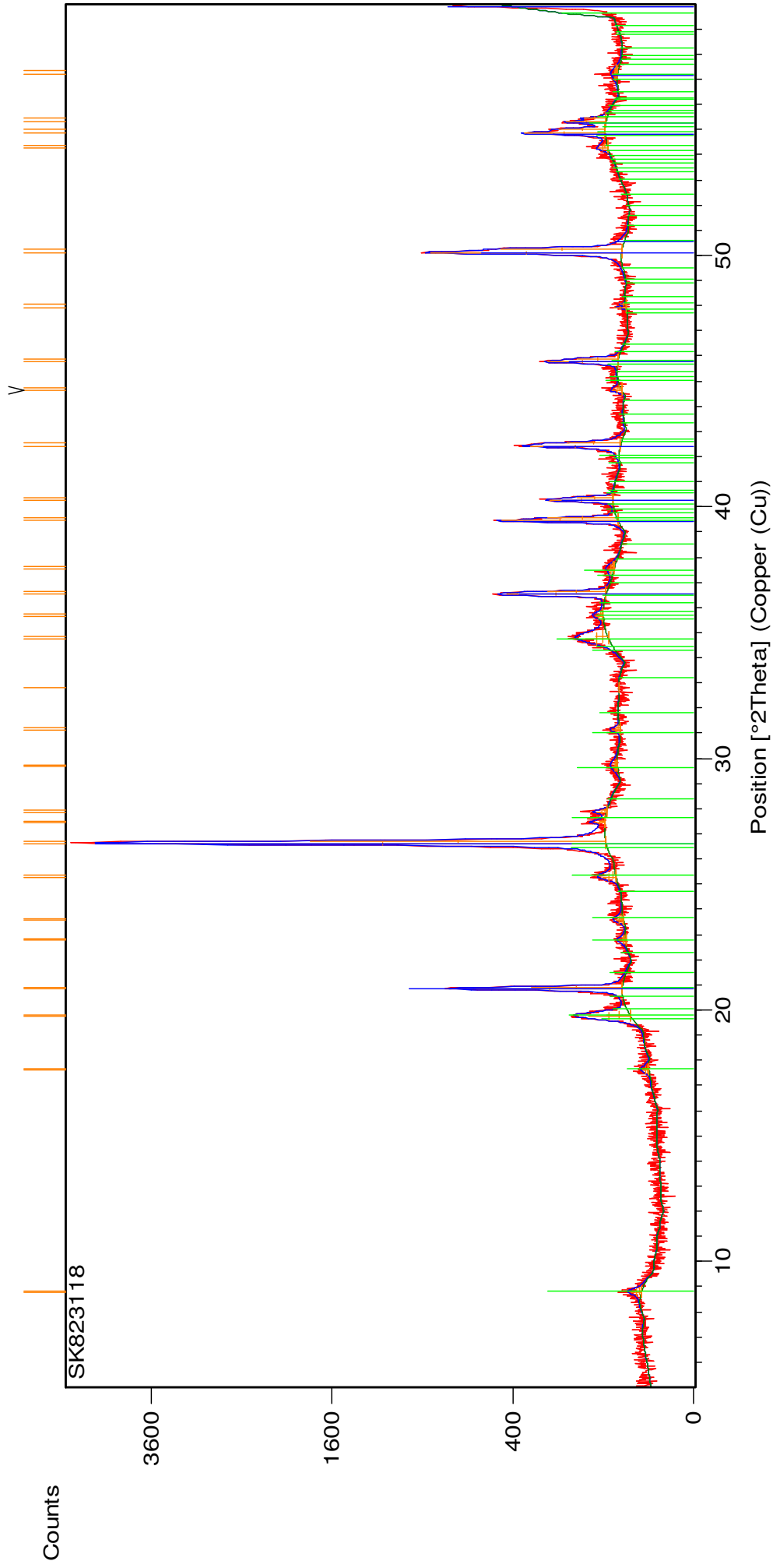
00-043-0685; Illite-2\ITMARG#2 [NR]

## Beilage 4: XRD-Diagramme Fundstelle Mayen-Hausen (MAH)



Peak List

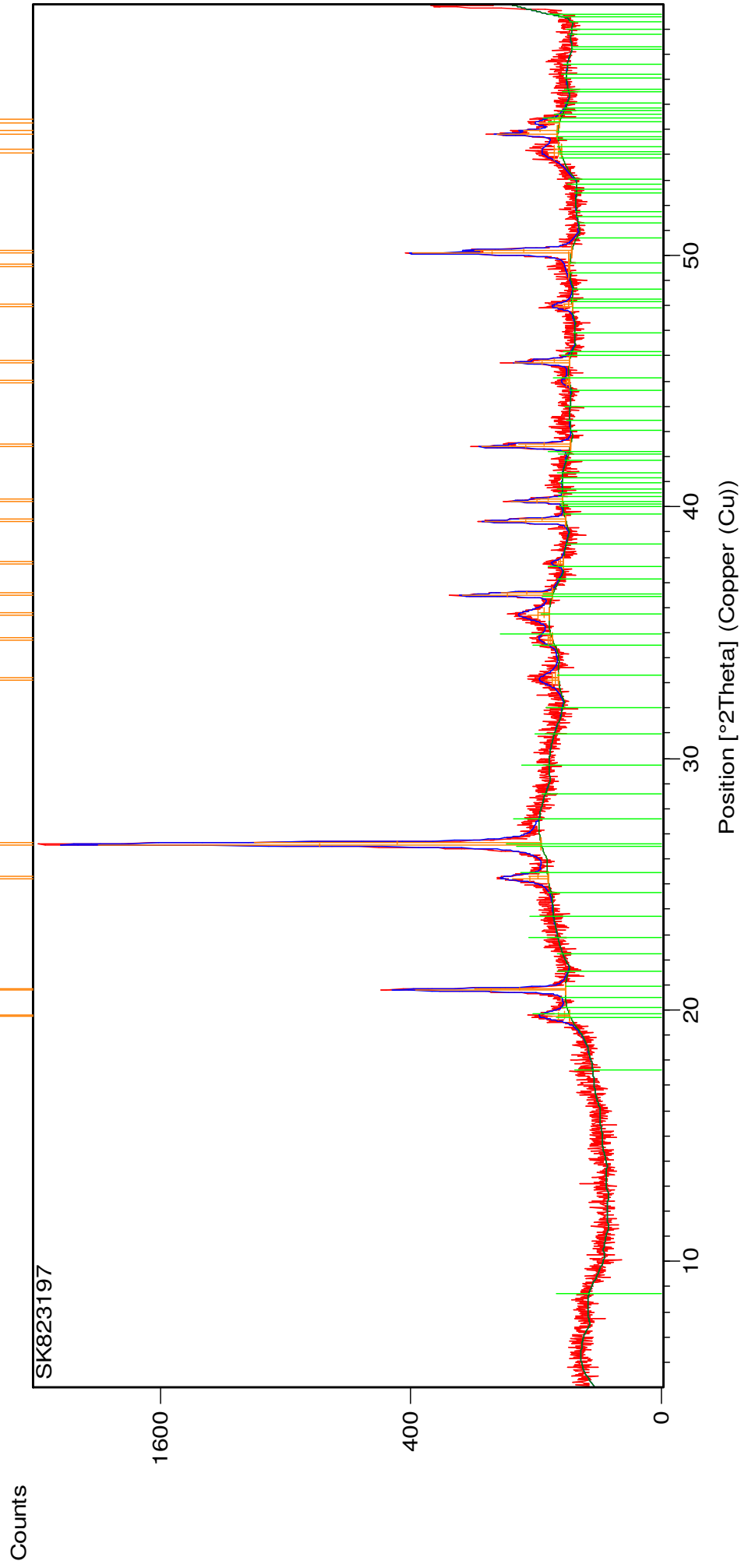
96-901-0842; K2.60 Na1.24 Ca0.16 Al4.16 Si11.84 O32.00; Sanidine
00-007-0032; K Al2 Si3 Al O10 (OH)2; Muscovite 2M1, syn
96-901-0147; Si6.00 O6.00; Quartz
00-024-0072; Fe2 O3; Hematite



Peak List

01-083-0539; Si O<sub>2</sub>; Quartz

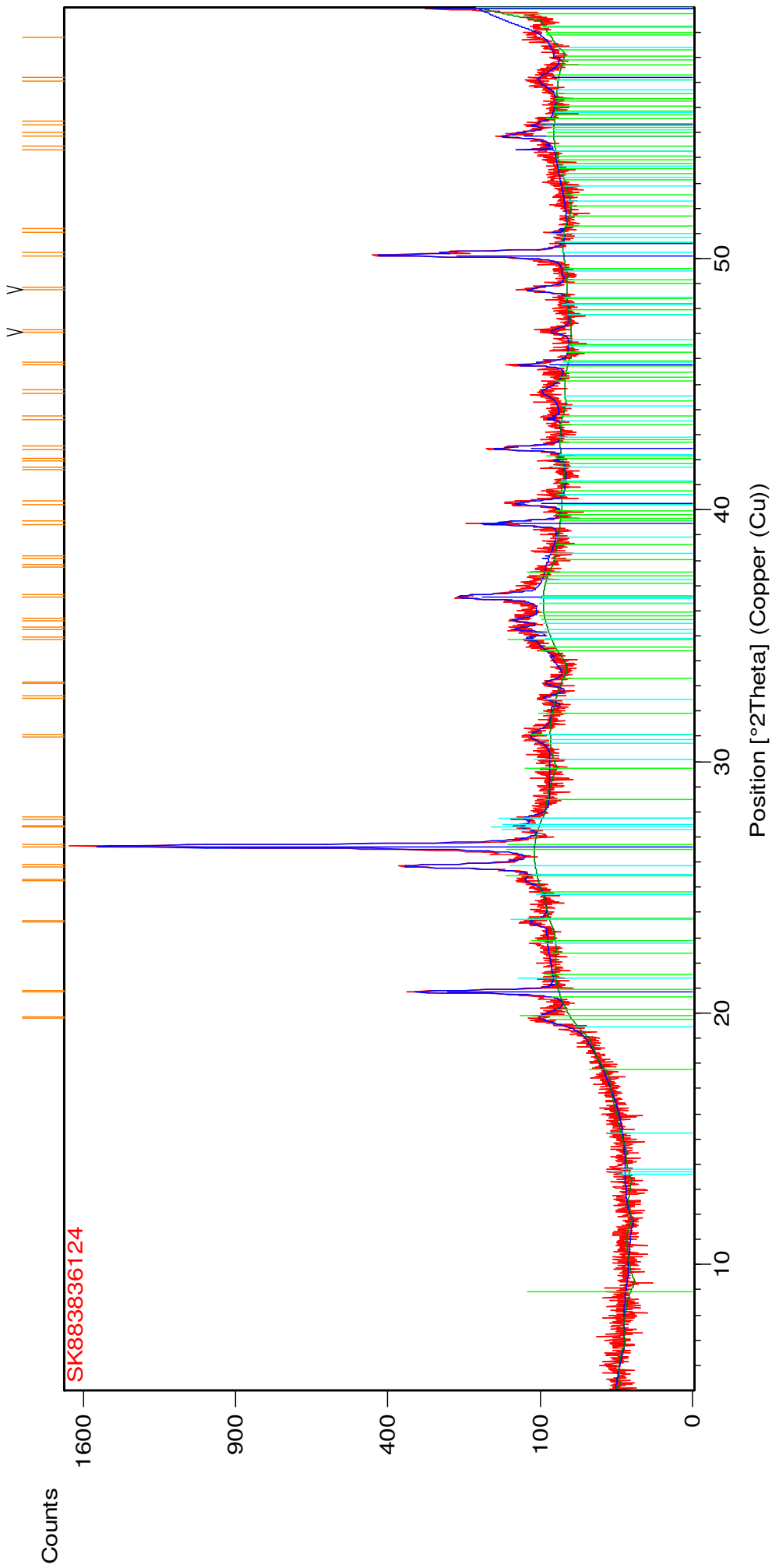
01-089-7537; K (Al, Fe)<sub>2</sub>AlSi<sub>3</sub>O<sub>10</sub>(OH)<sub>2</sub>; Phengite 2M1, Fe-rich, heated



Peak List

01-074-0345; K Al2 ( Si3 Al ) O10 ( O H )2; Muscovite 2\ITM\RG#1

Beilage 5: XRD-Diagramme Fundstelle Mülheim-Kärlich, Hütte (MKR)

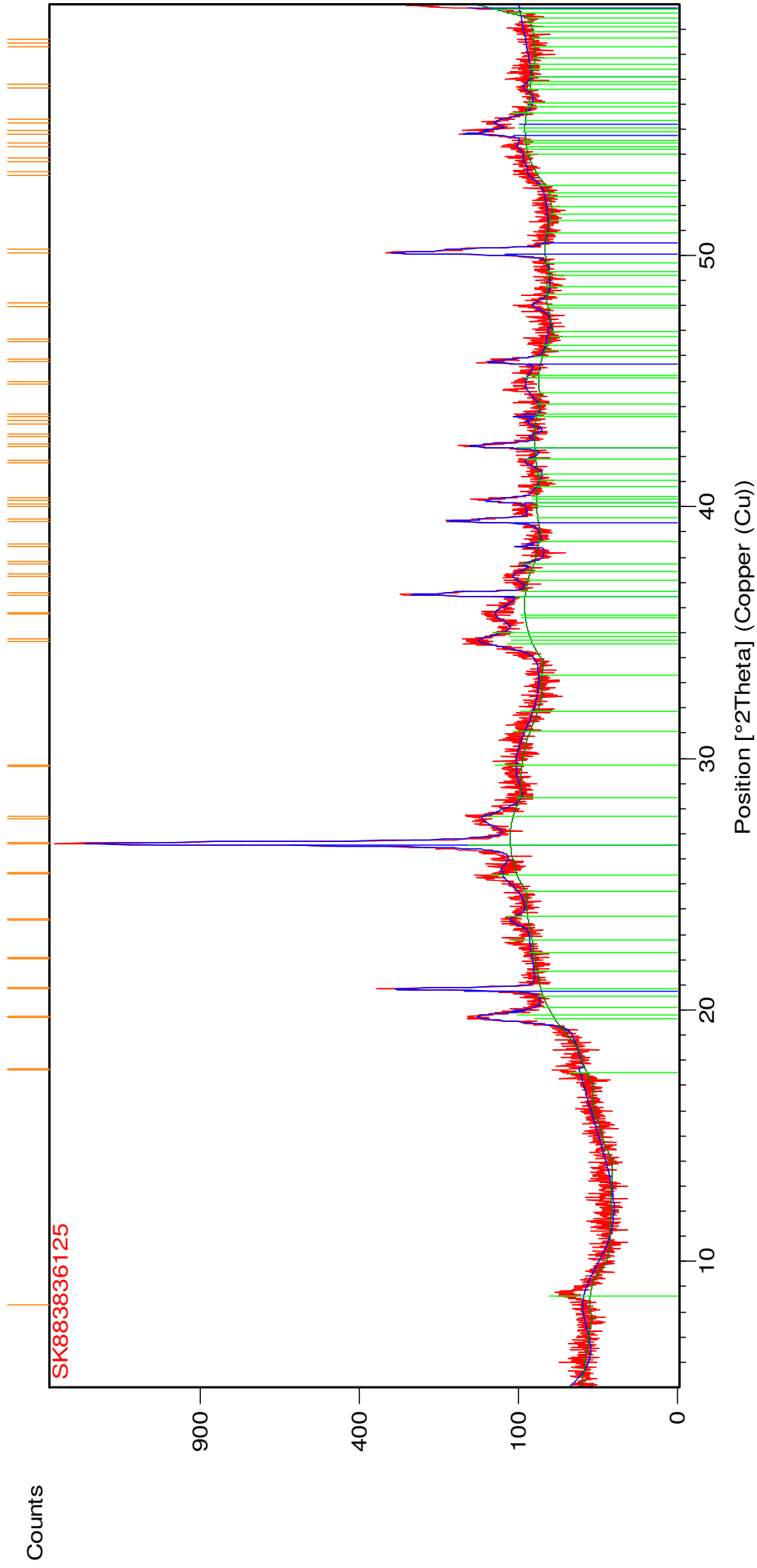


Peak List

01-085-0797; Quartz

01-089-7537; Phengite 2M1, Fe-rich, heated

00-019-1227; Sanidine

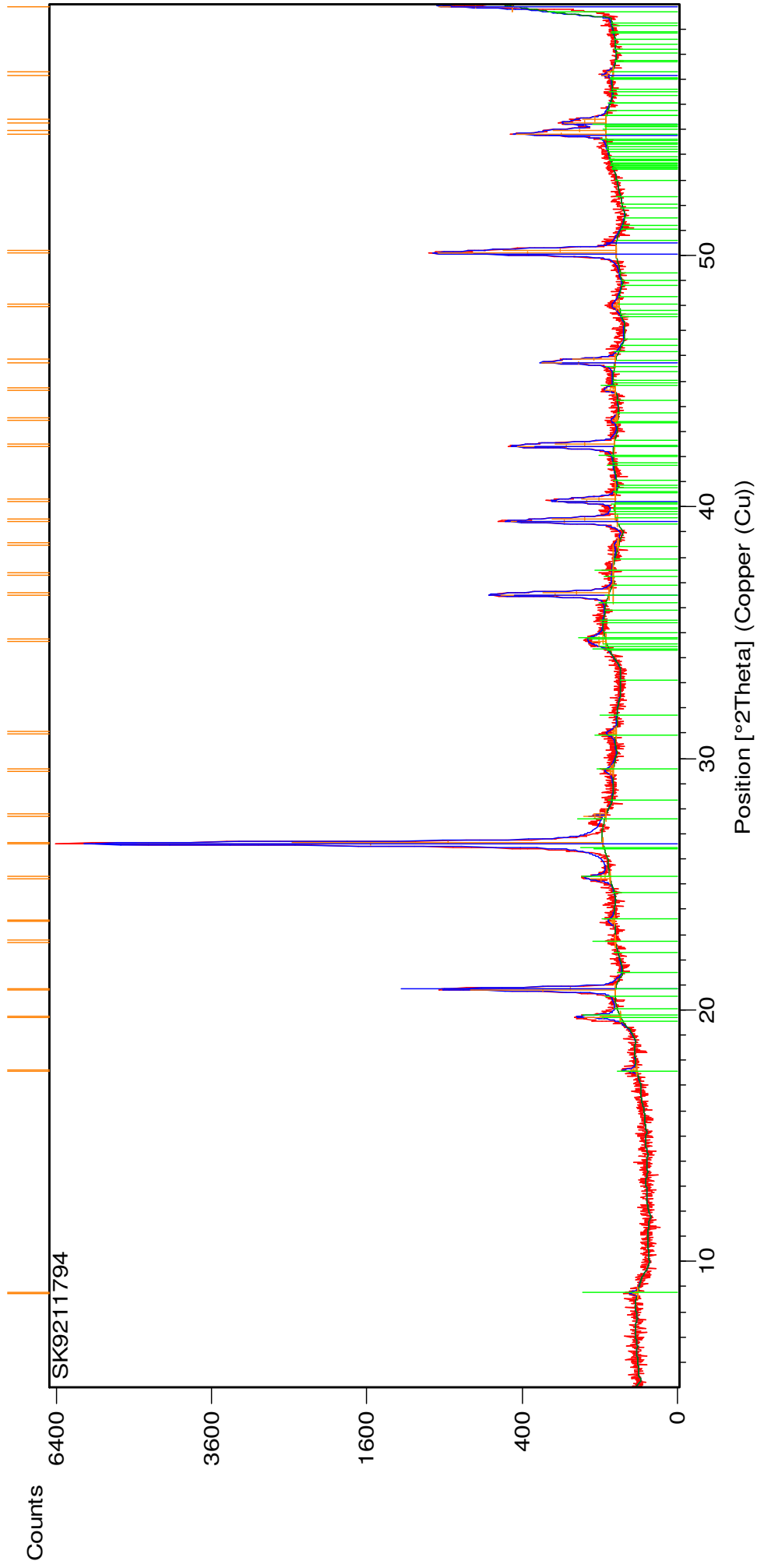


Peak List

01-070-3755; Quartz

01-077-2255; Muscovite 2\TM/RG#1

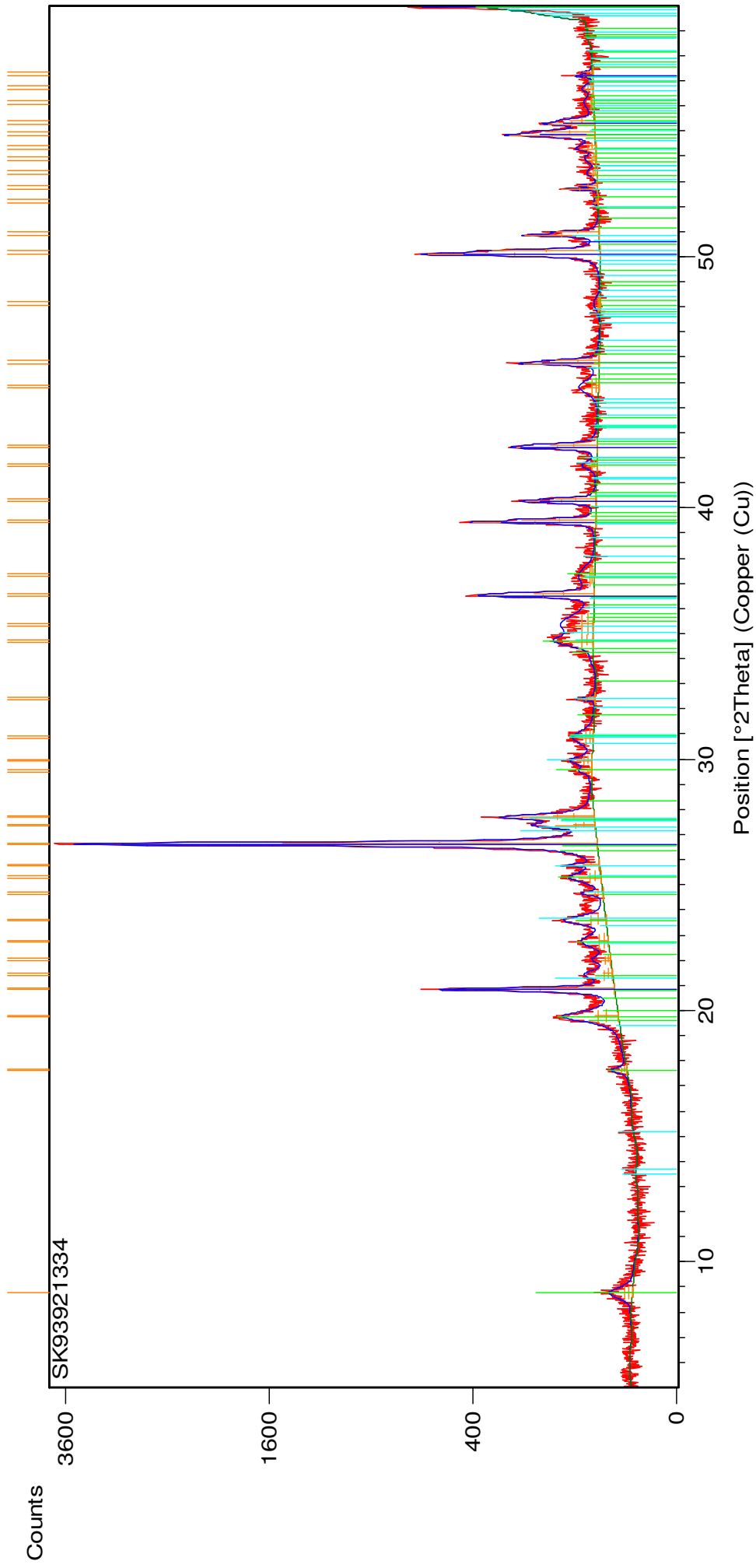
Beilage 6: XRD-Diagramme Fundstelle Ochtendung, Flur „Fressenfeld“ (OFN)



Peak List

01-083-0539; Si O2; Quartz

96-900-5015; K3.52 Na0.44 Al11.36 Fe0.24 Mg0.08 Si12.32 O48.00 H8.00; Muscovite

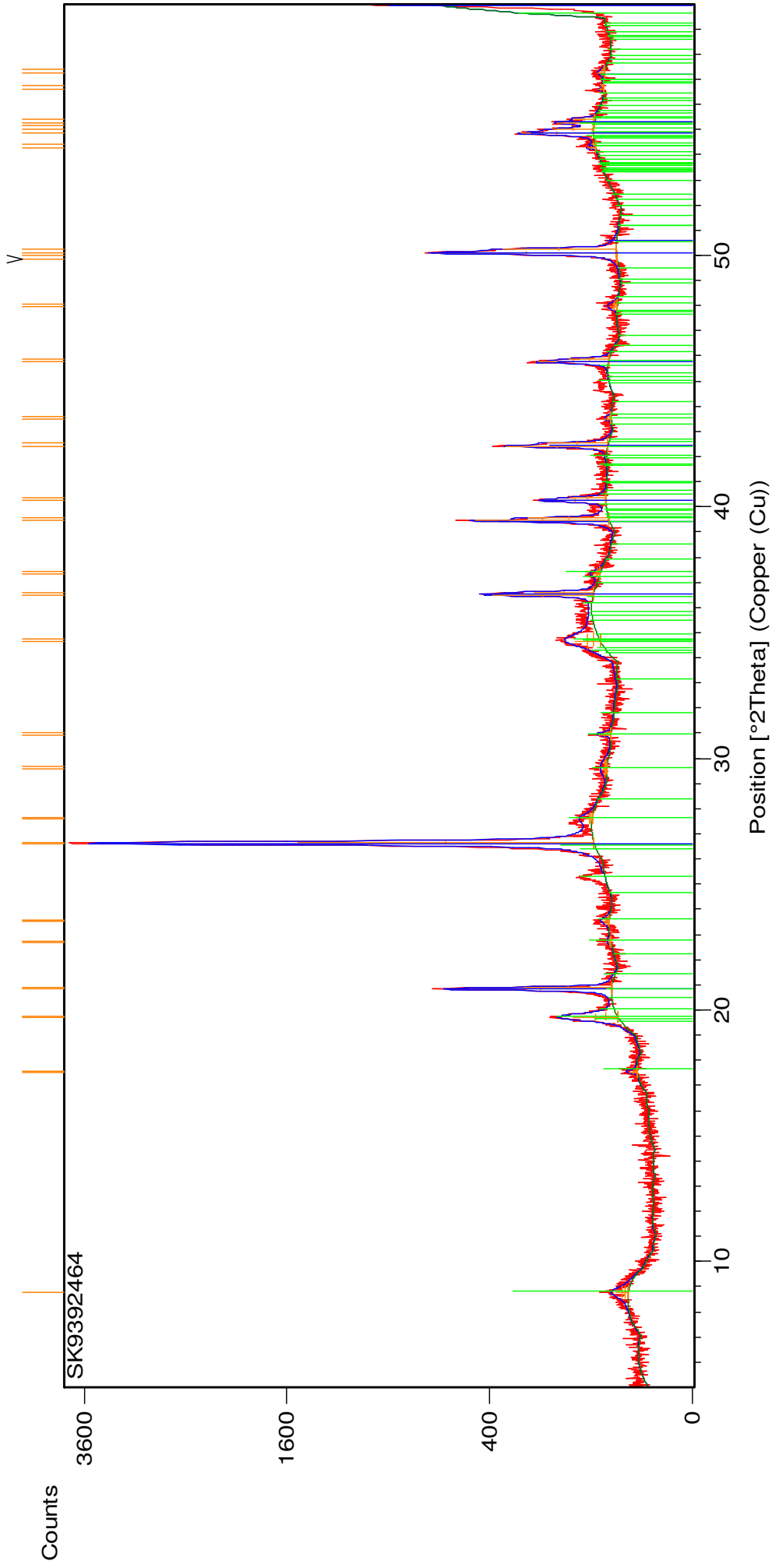


Peak List

00-046-1045; Si O2; Quartz, syn

01-089-7537; K ( Al , Fe )2 Al Si3 O10 ( O H )2; Phengite 2M1, Fe-rich, heated

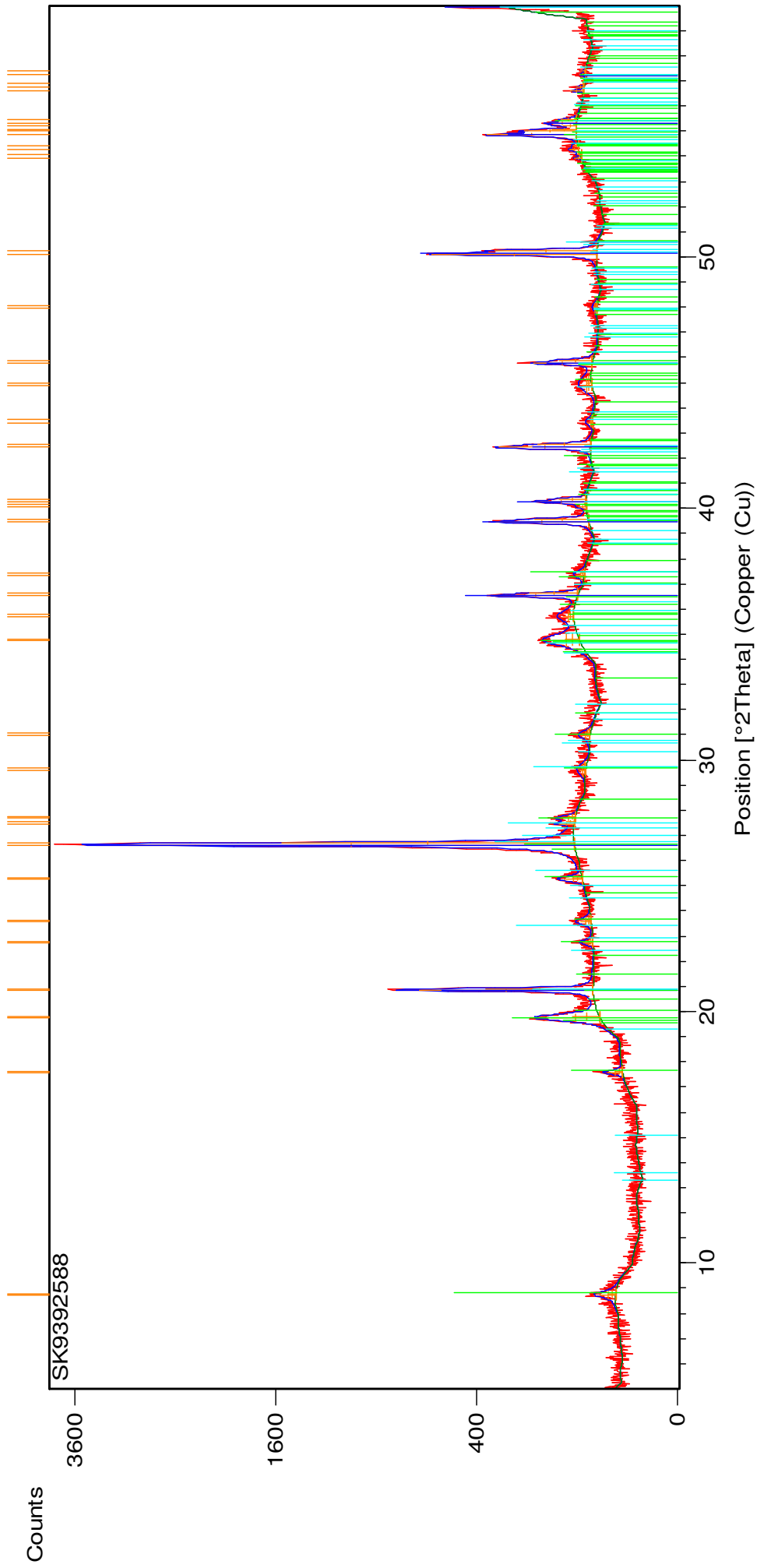
01-089-2650; K ( Al Si3 O8 ) ; Sanidine



Peak List

96-500-0036; Si3.00 O6.00; Quartz

96-900-5496; K1.90 Na0.10 Al9.12 Mg0.80 Fe1.12 Si12.96 O47.84 F0.16 H7.84; Phengite



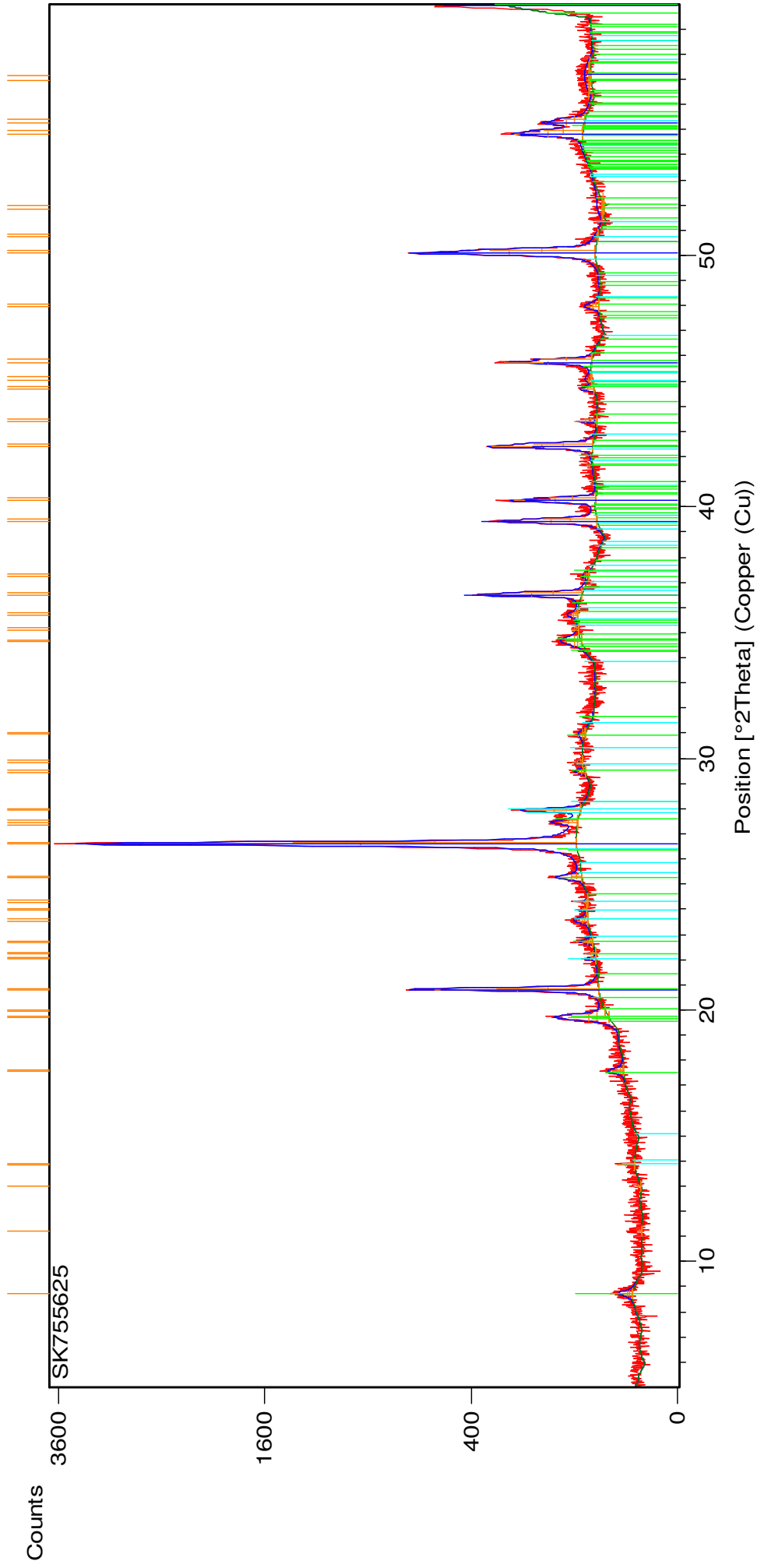
Peak List

96-101-1173; Si3.00 O6.00; Quartz low

96-900-5494; K1.90 Na0.10 Al9.12 Mg0.80 Fe1.12 Si12.96 O47.84 F0.16 H7.84; Phengite

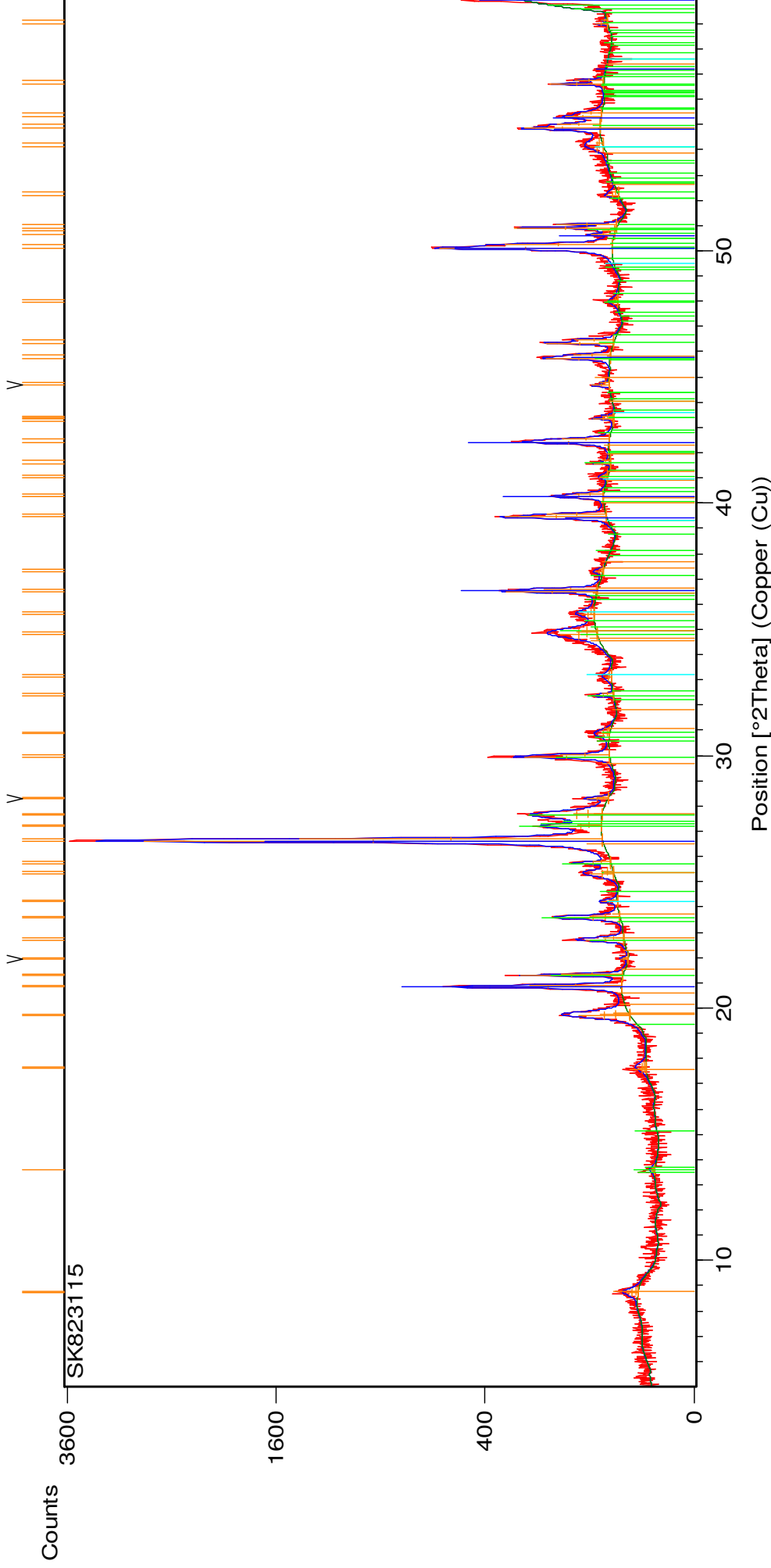
01-077-0992; K Fe0.28 Al0.72 Si3 O8; Samidine ferric

## Beilage 7: XRD-Diagramme Fundstelle Trimbs, Thüerer Höhe (TRW)



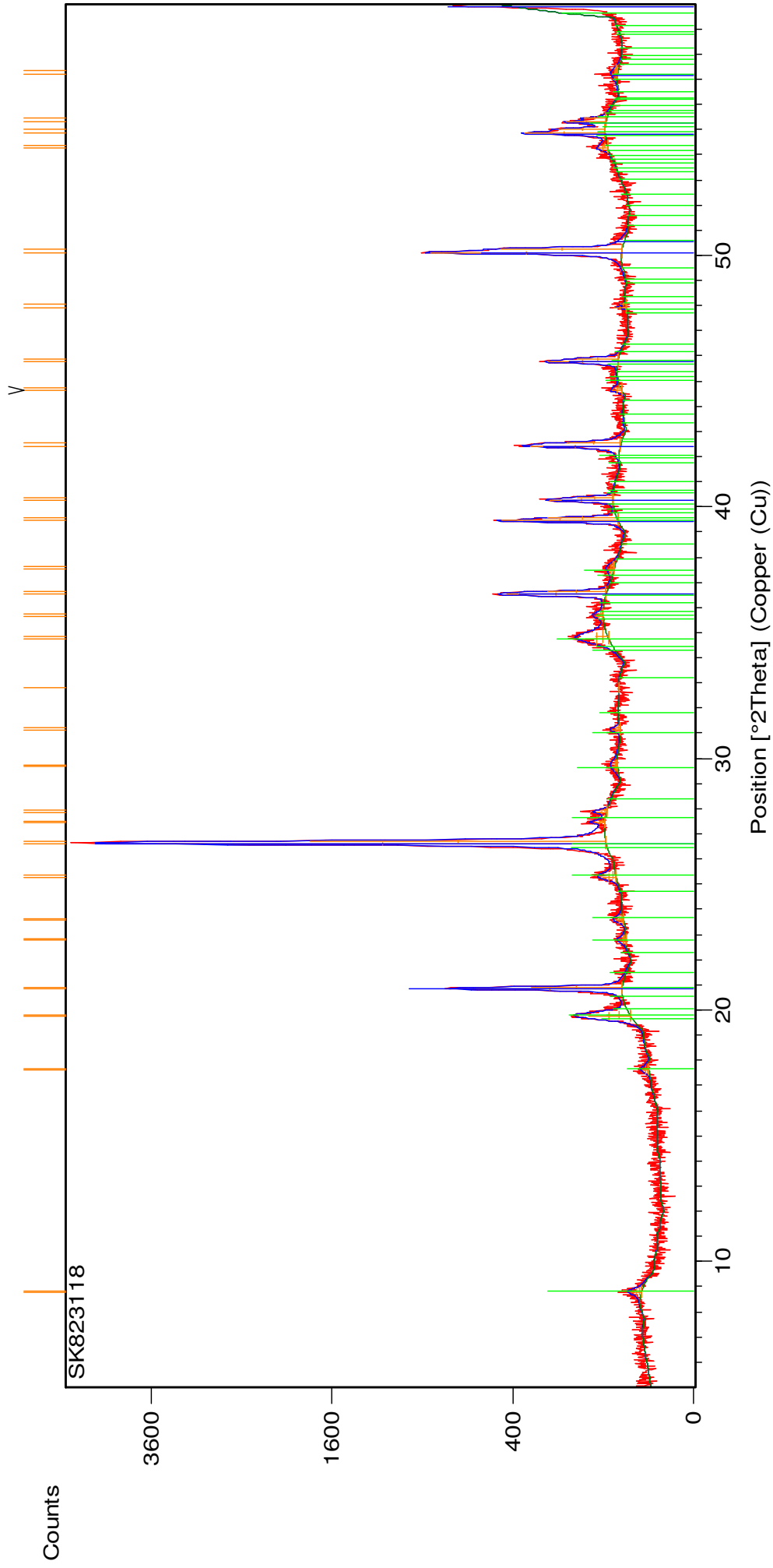
Peak List

96-901-2601; Si3.00 O6.00; Quartz
96-900-5015; K3.52 Na0.44 Al11.36 Fe0.24 Mg0.08 Si12.32 O48.00 H8.00; Muscovite
00-041-1480; ( Na , Ca ) Al ( Si , Al )3 O8; Albite, calcian, ordered



Peak List

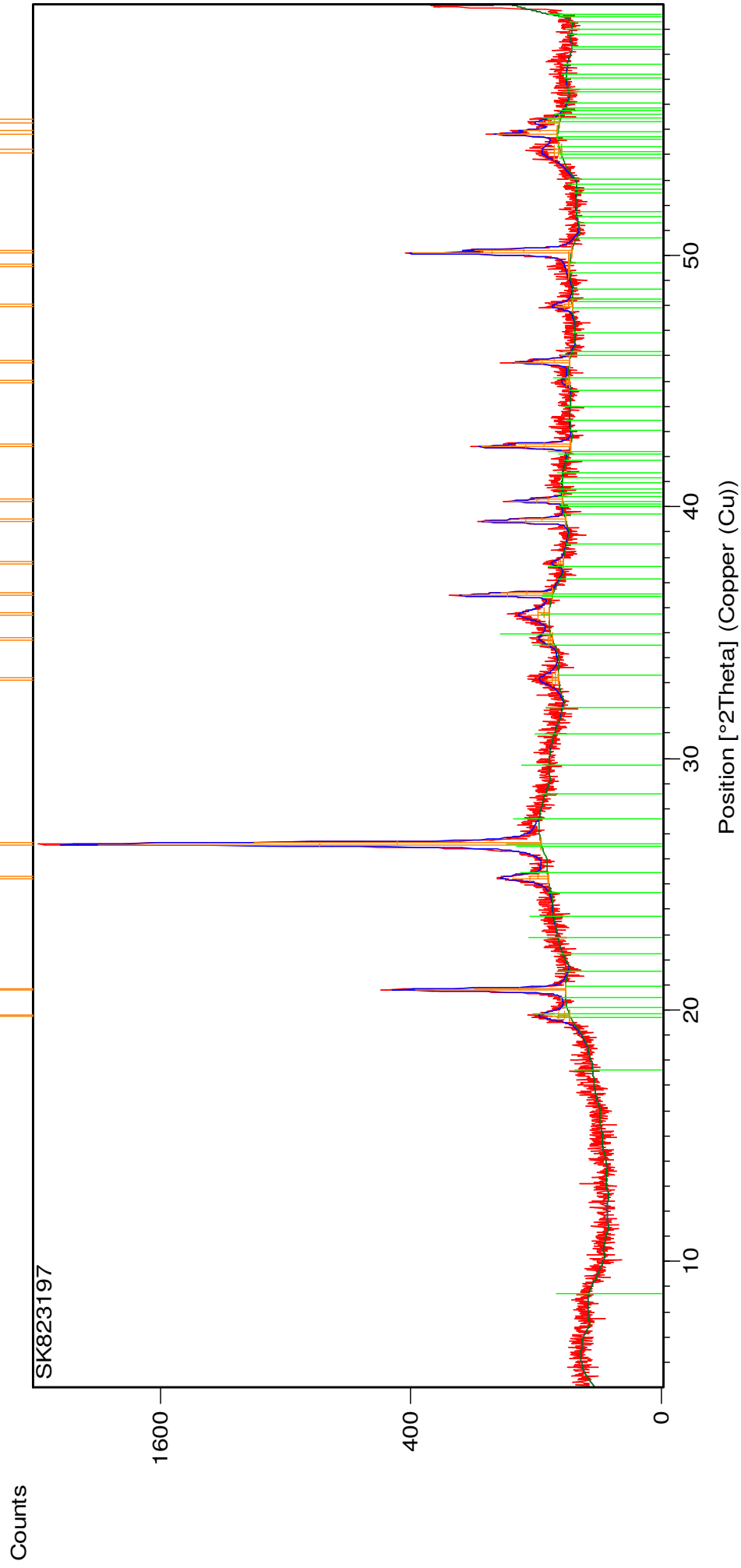
96-901-0842; K2.60 Na1.24 Ca0.16 Al4.16 Si11.84 O32.00; Sanidine
00-007-0032; K Al2 Si3 Al O10 (OH)2; Muscovite 2M1, syn
96-901-0147; Si6.00 O6.00; Quartz
00-024-0072; Fe2 O3; Hematite



Peak List

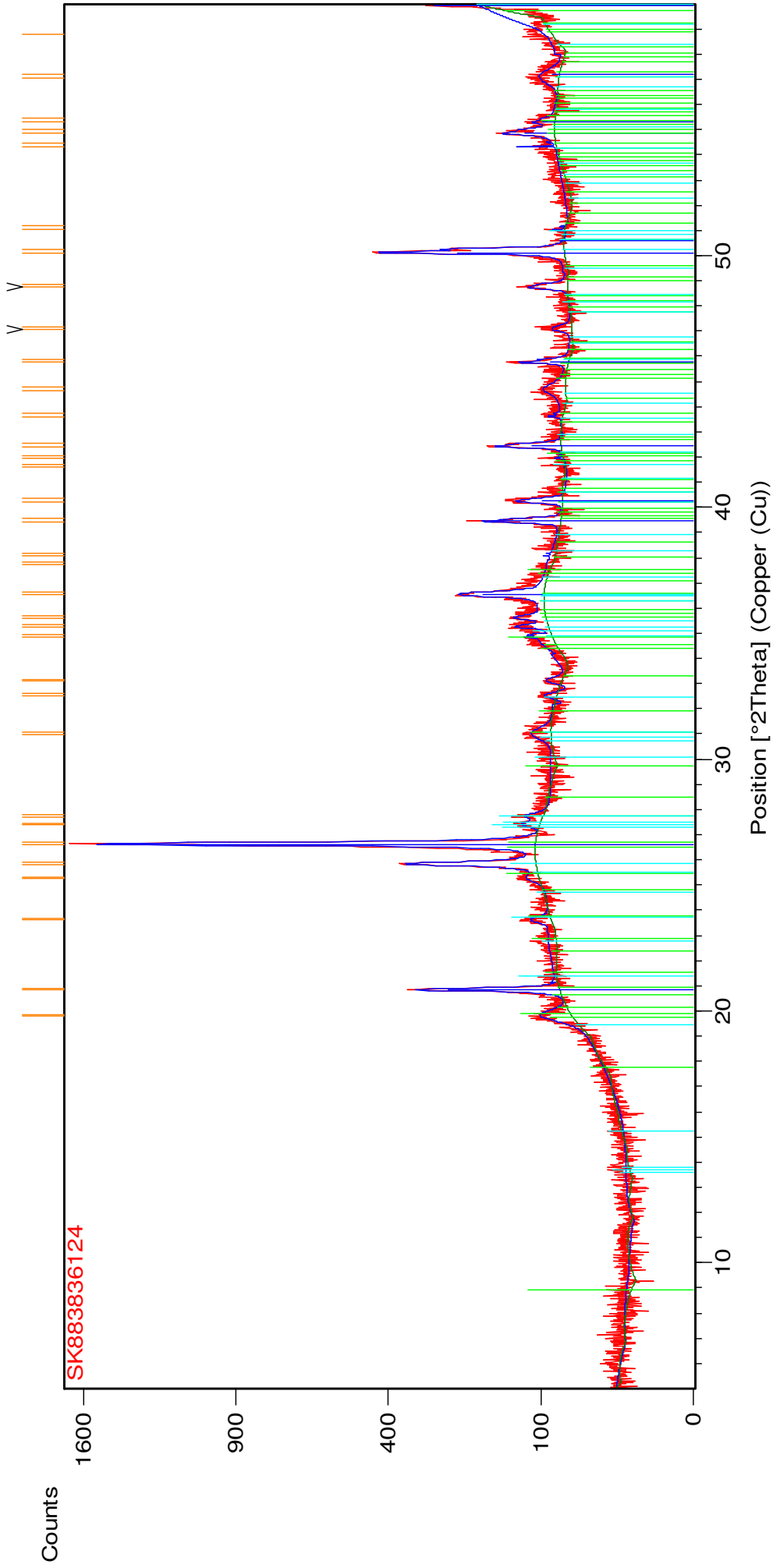
01-083-0539; Si O<sub>2</sub>; Quartz

01-089-7537; K (Al, Fe)<sub>2</sub>AlSi<sub>3</sub>O<sub>10</sub>(OH)<sub>2</sub>; Phengite 2M1, Fe-rich, heated



Peak List

01-074-0345; K Al2 ( Si3 Al ) O10 ( O H )2; Muscovite 2\ITM\RG#1

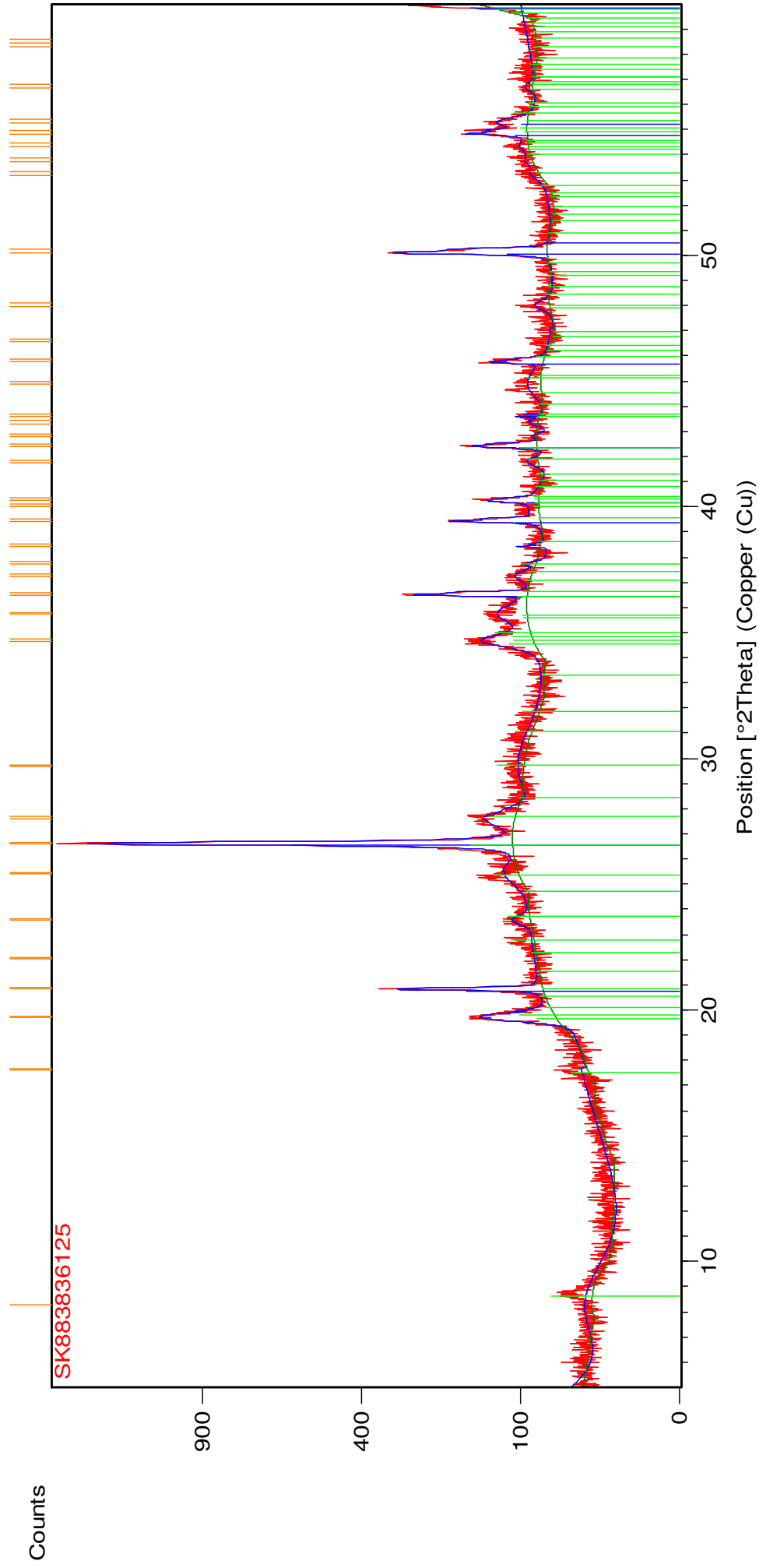


Peak List

01-085-0797; Quartz

01-089-7537; Phengite 2M1, Fe-rich, heated

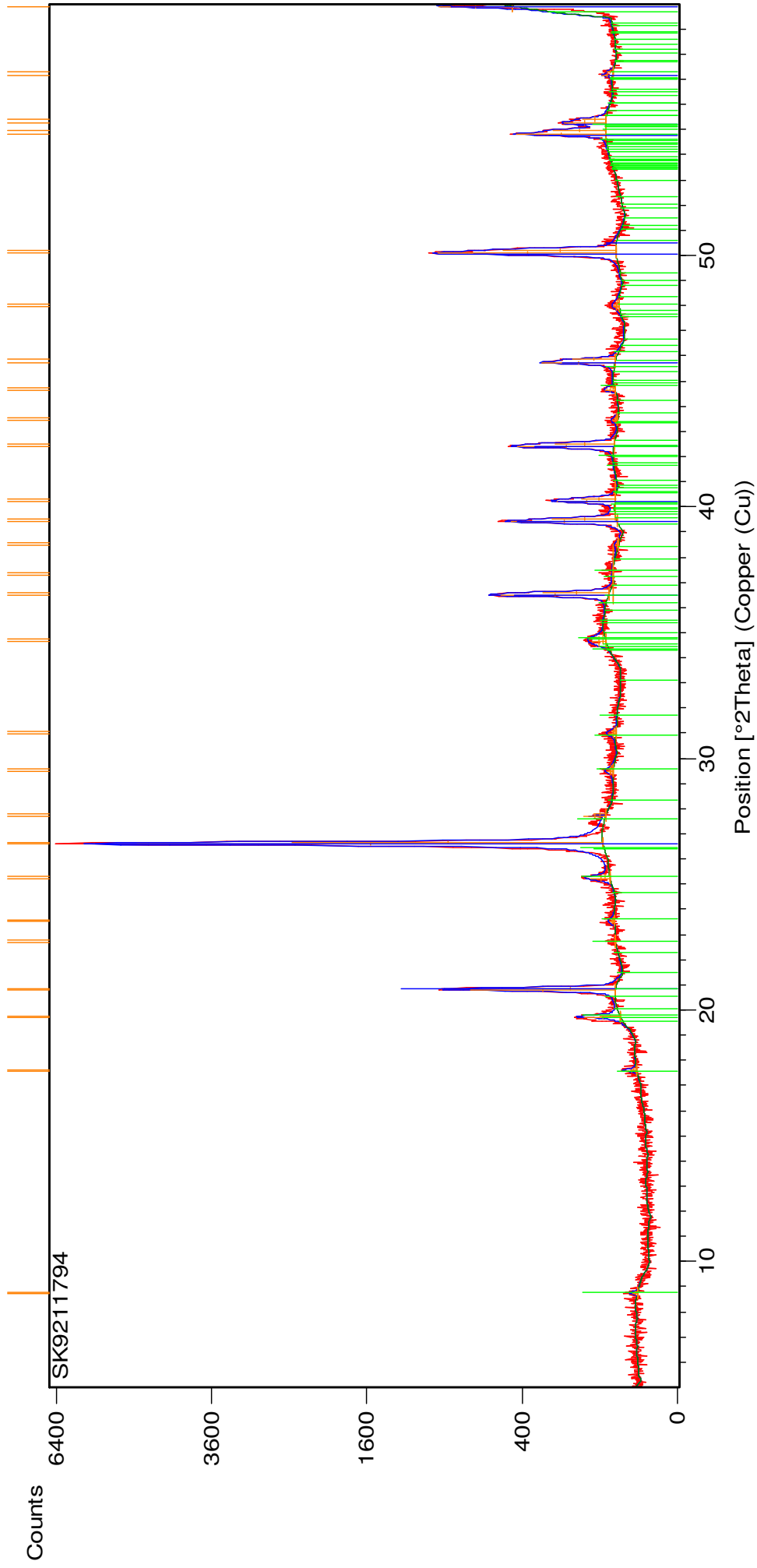
00-019-1227; Sanidine



Peak List

01-070-3755; Quartz

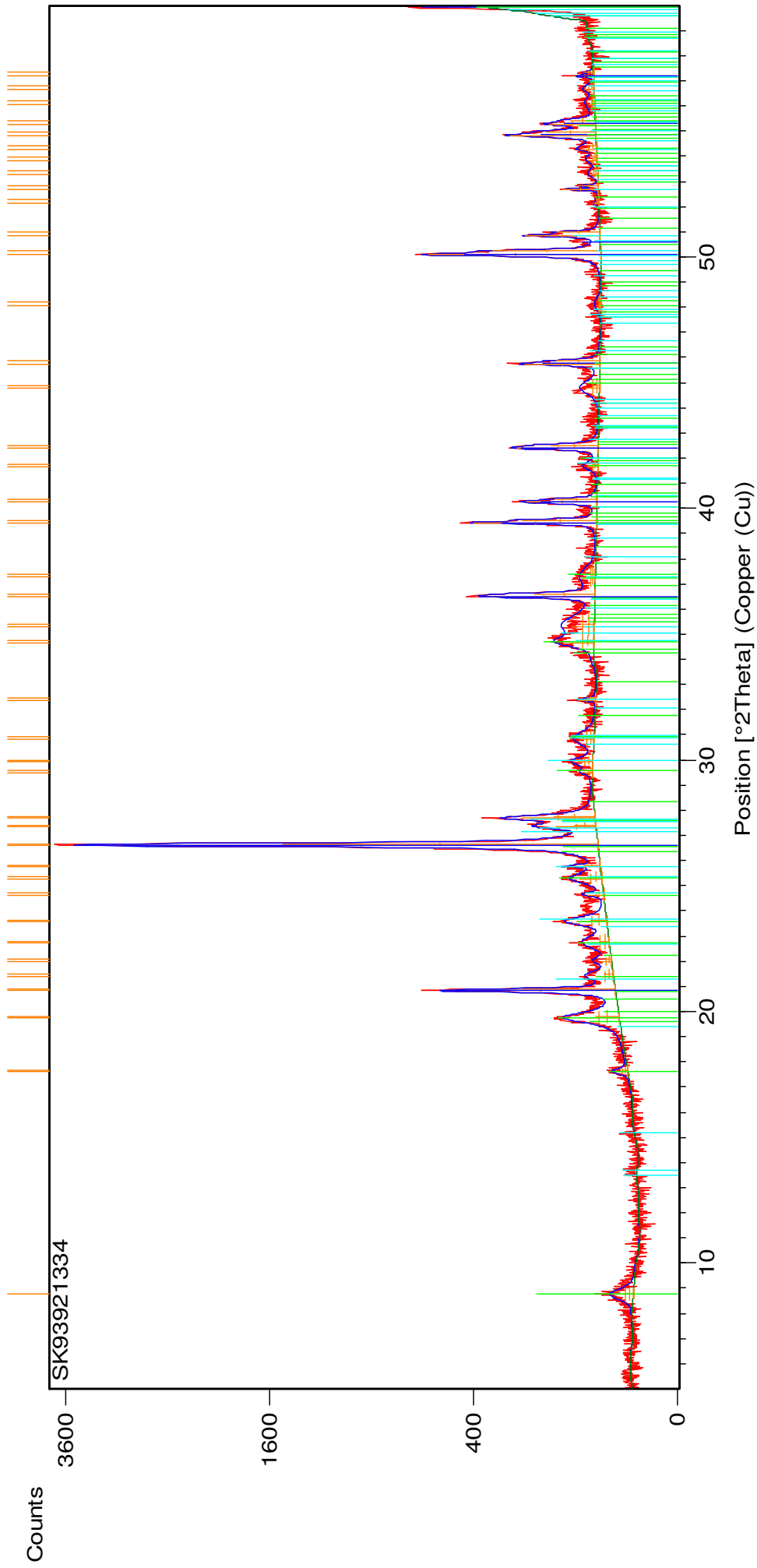
01-077-2255; Muscovite 2\TM/RG#1



Peak List

01-083-0539; Si O2; Quartz

96-900-5015; K3.52 Na0.44 Al11.36 Fe0.24 Mg0.08 Si12.32 O48.00 H8.00; Muscovite

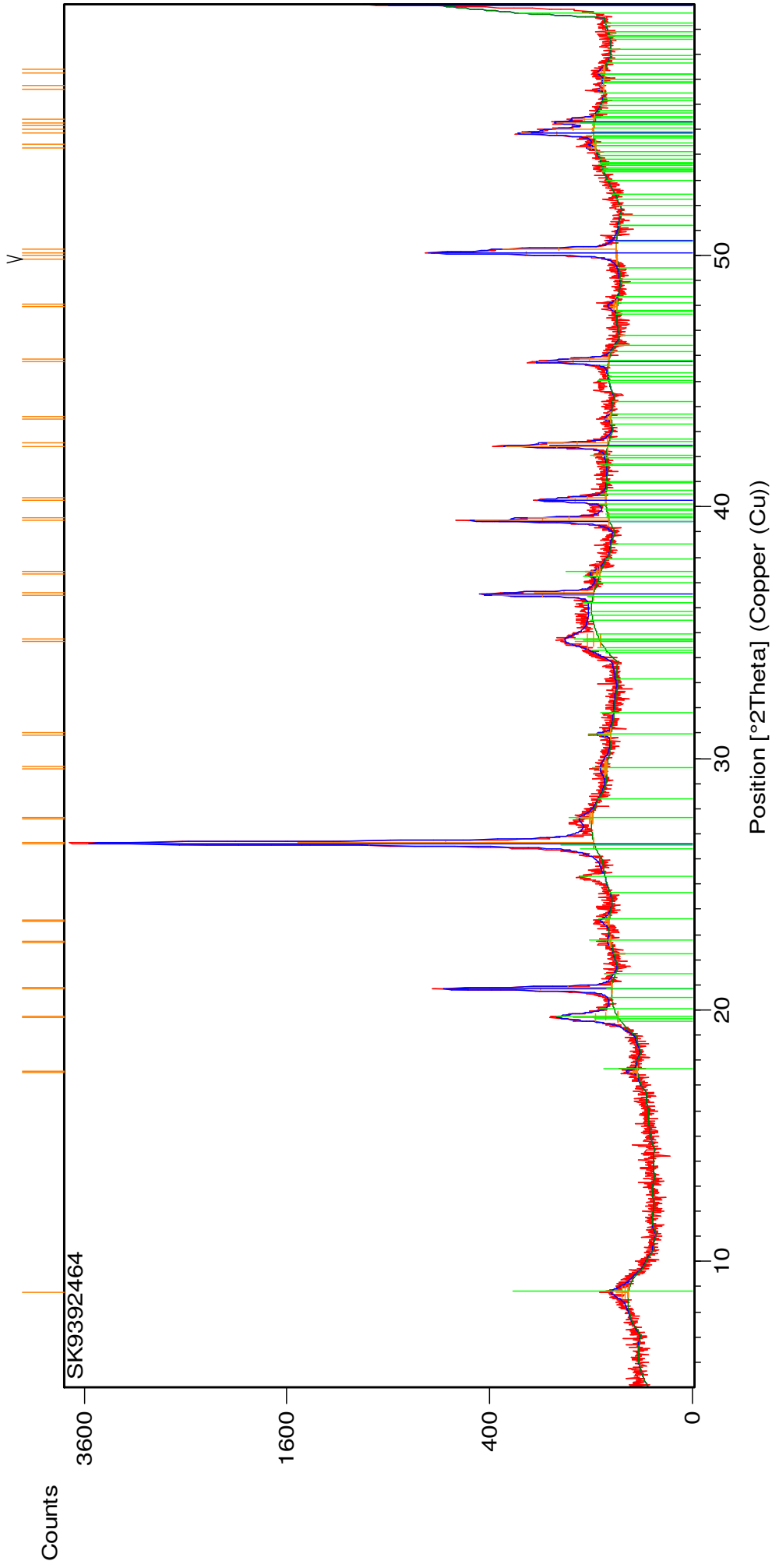


Peak List

00-046-1045; Si O2; Quartz, syn

01-089-7537; K ( Al , Fe )2 Al Si3 O10 ( O H )2; Phengite 2M1, Fe-rich, heated

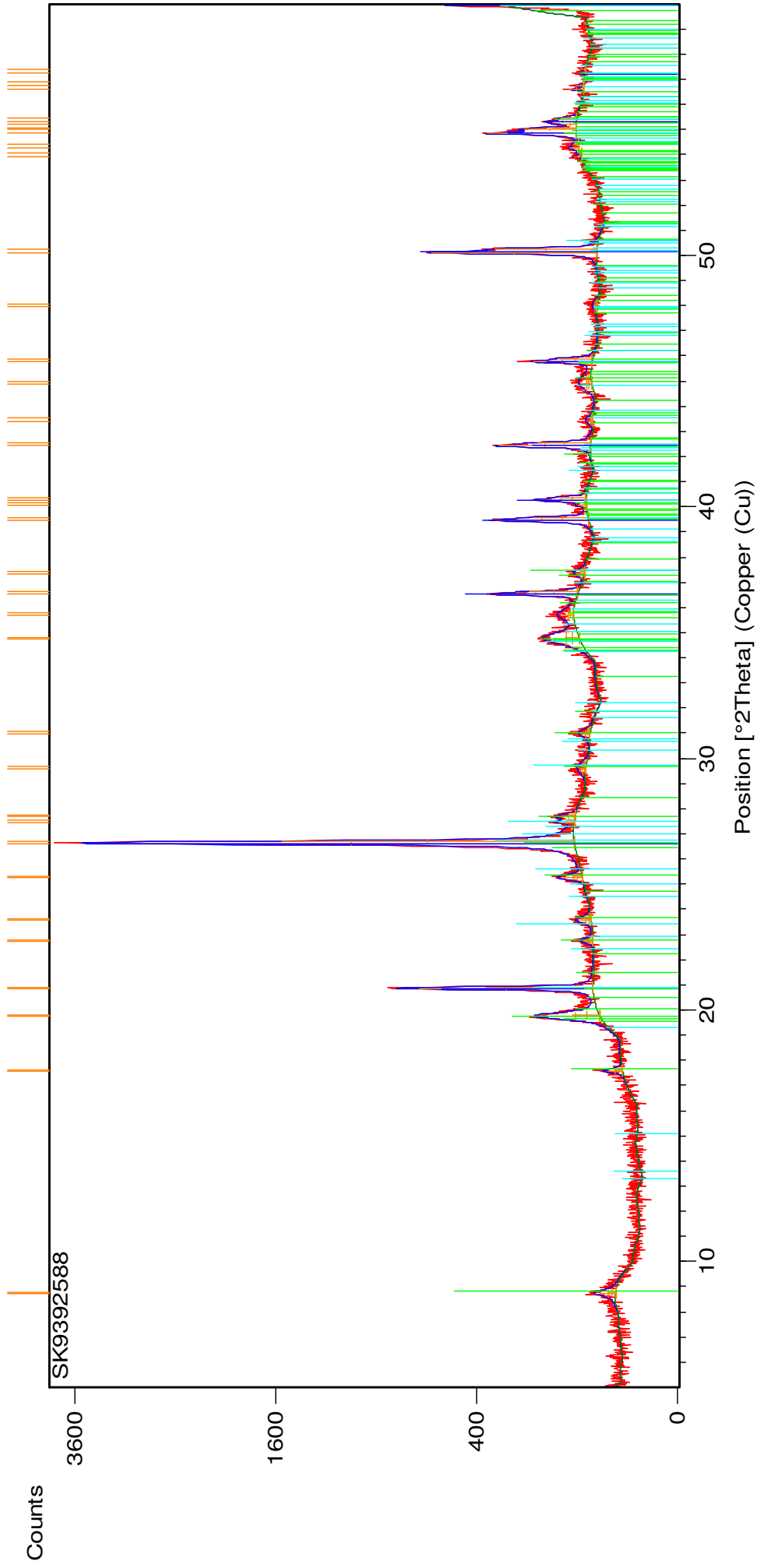
01-089-2650; K ( Al Si3 O8 ) ; Sanidine



Peak List

96-500-0036; Si3.00 O6.00; Quartz

96-900-5496; K1.90 Na0.10 Al9.12 Mg0.80 Fe1.12 Si12.96 O47.84 F0.16 H7.84; Phengite

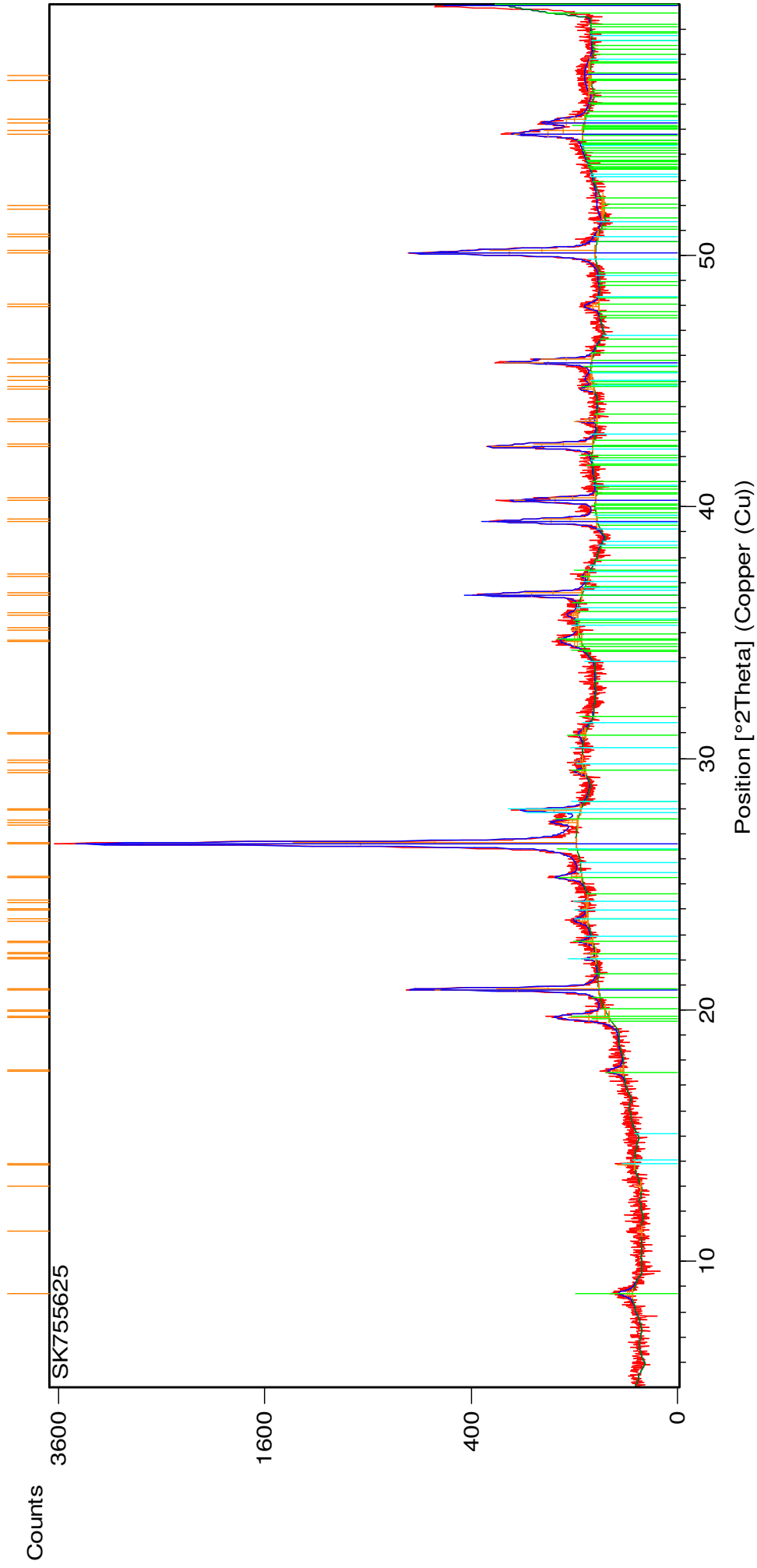


Peak List

96-101-1173; Si3.00 O6.00; Quartz low

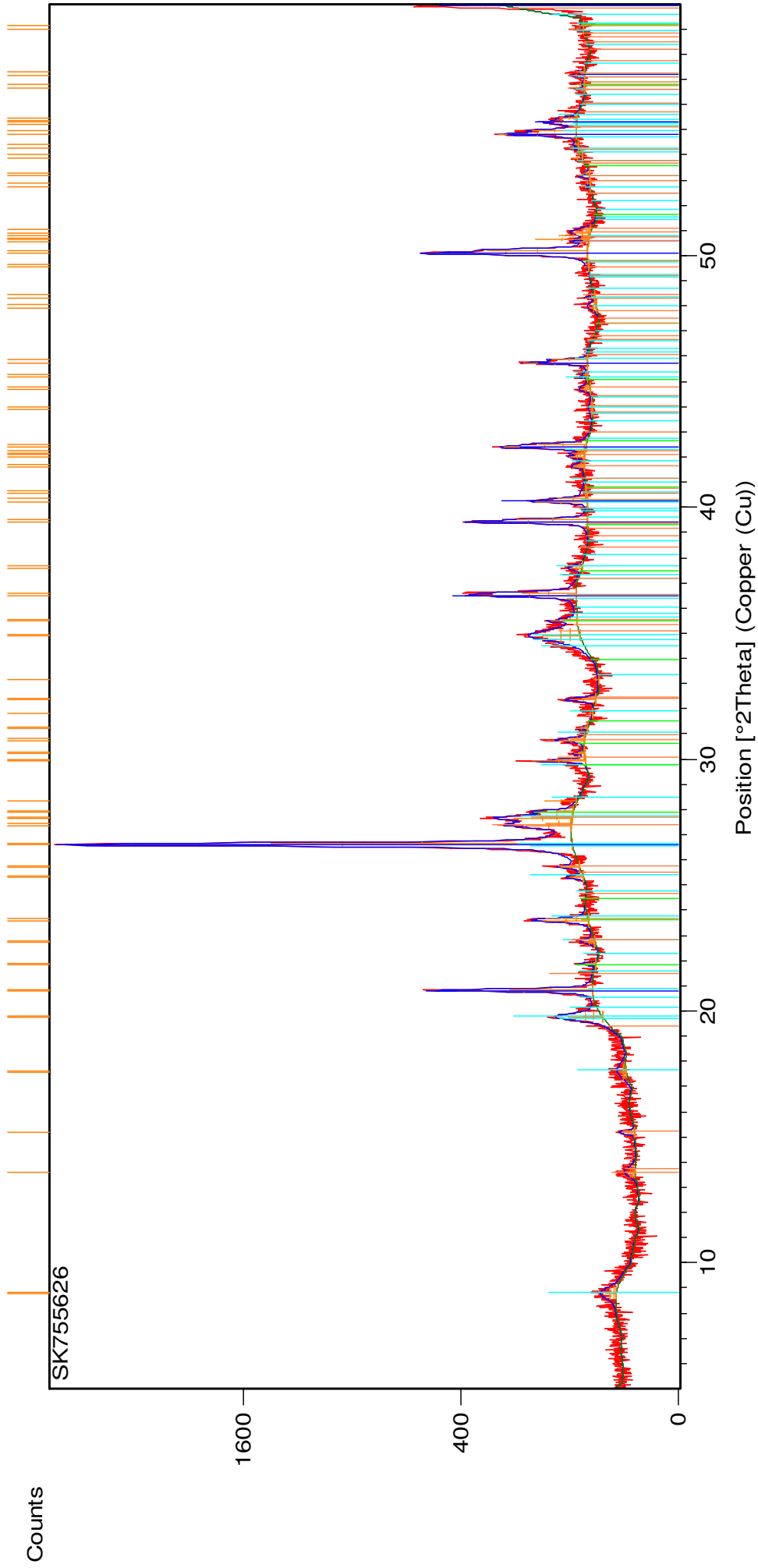
96-900-5494; K1.90 Na0.10 Al9.12 Mg0.80 Fe1.12 Si12.96 O47.84 F0.16 H7.84; Phengite

01-077-0992; K Fe0.28 Al0.72 Si3 O8; Samidine ferric



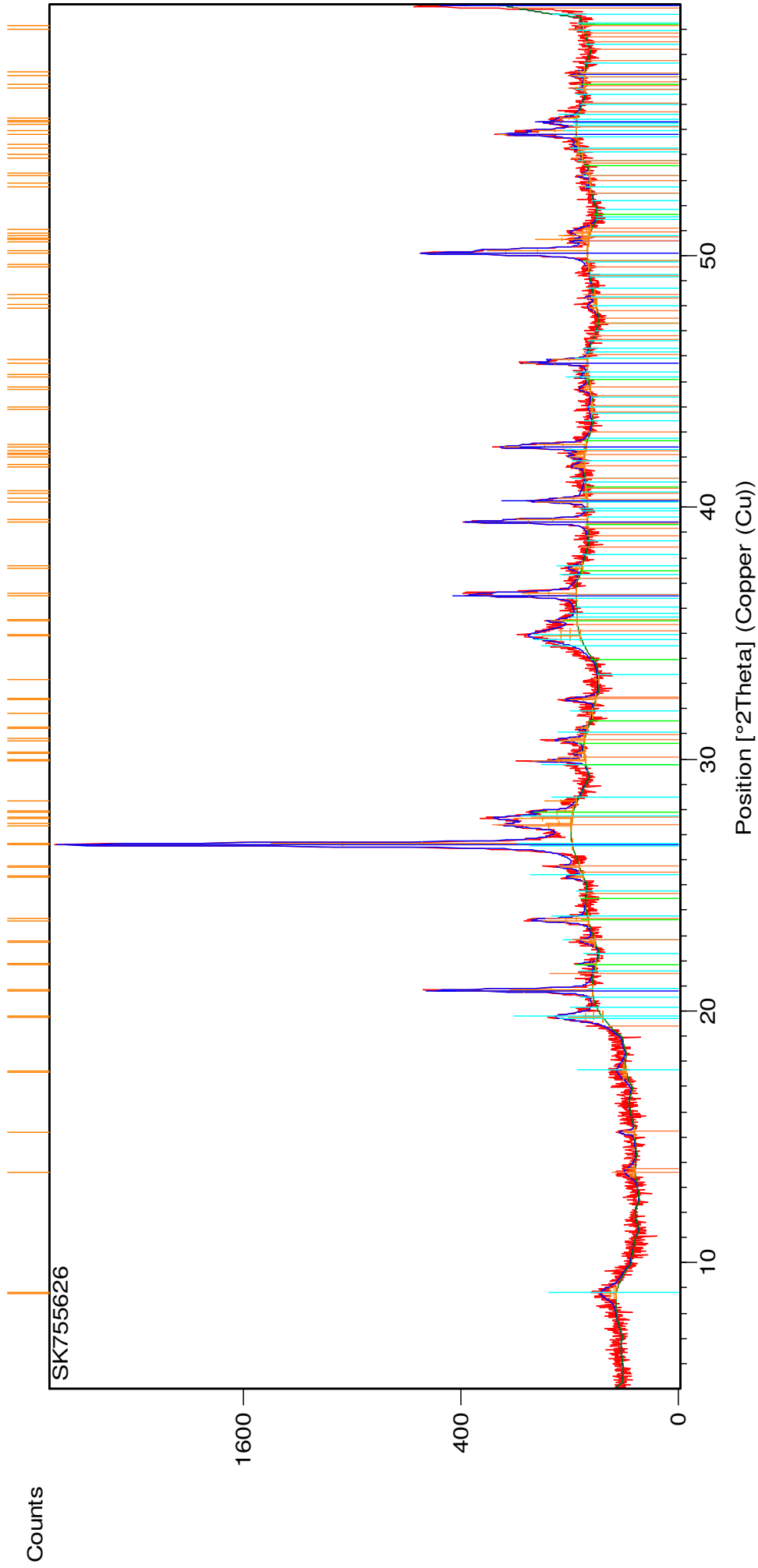
Peak List

96-901-2601; Si <sub>3</sub> O <sub>6</sub>	06.00; Quartz
96-900-5015; K <sub>3</sub> Fe <sub>0.24</sub> Al <sub>11.36</sub> Fe <sub>0.24</sub> Mg <sub>0.08</sub> Si <sub>12.32</sub> O <sub>48.00</sub> H <sub>8.00</sub>	Muscovite
00-041-1480; (Na, Ca)Al(Si, Al) <sub>3</sub> O <sub>8</sub>	Albite, calcian, ordered



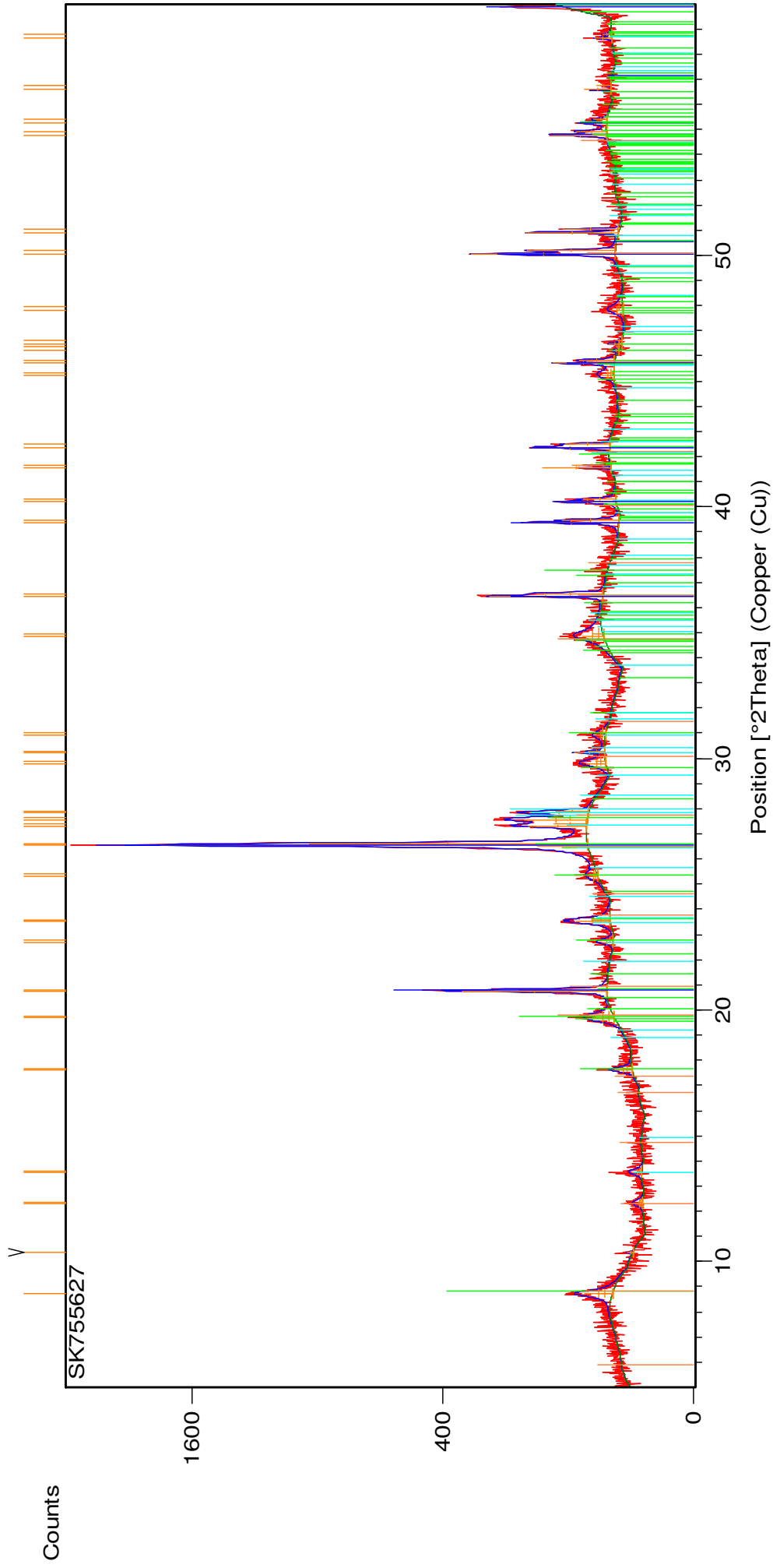
Peak List

96-101-1098; Si3.00 O6.00; Quartz low
01-070- $\beta$ 754; K ( Al4 Si2 O9 ( OH)3 ); Illite
00-003-0499; ( Na0.4 Ca0.6 ) Al1.6 Si2.4 O8; Labradorite
01-089-1455; K0.42 Na0.58 Ca0.03 ( Al Si3 O8 ); Sanidine



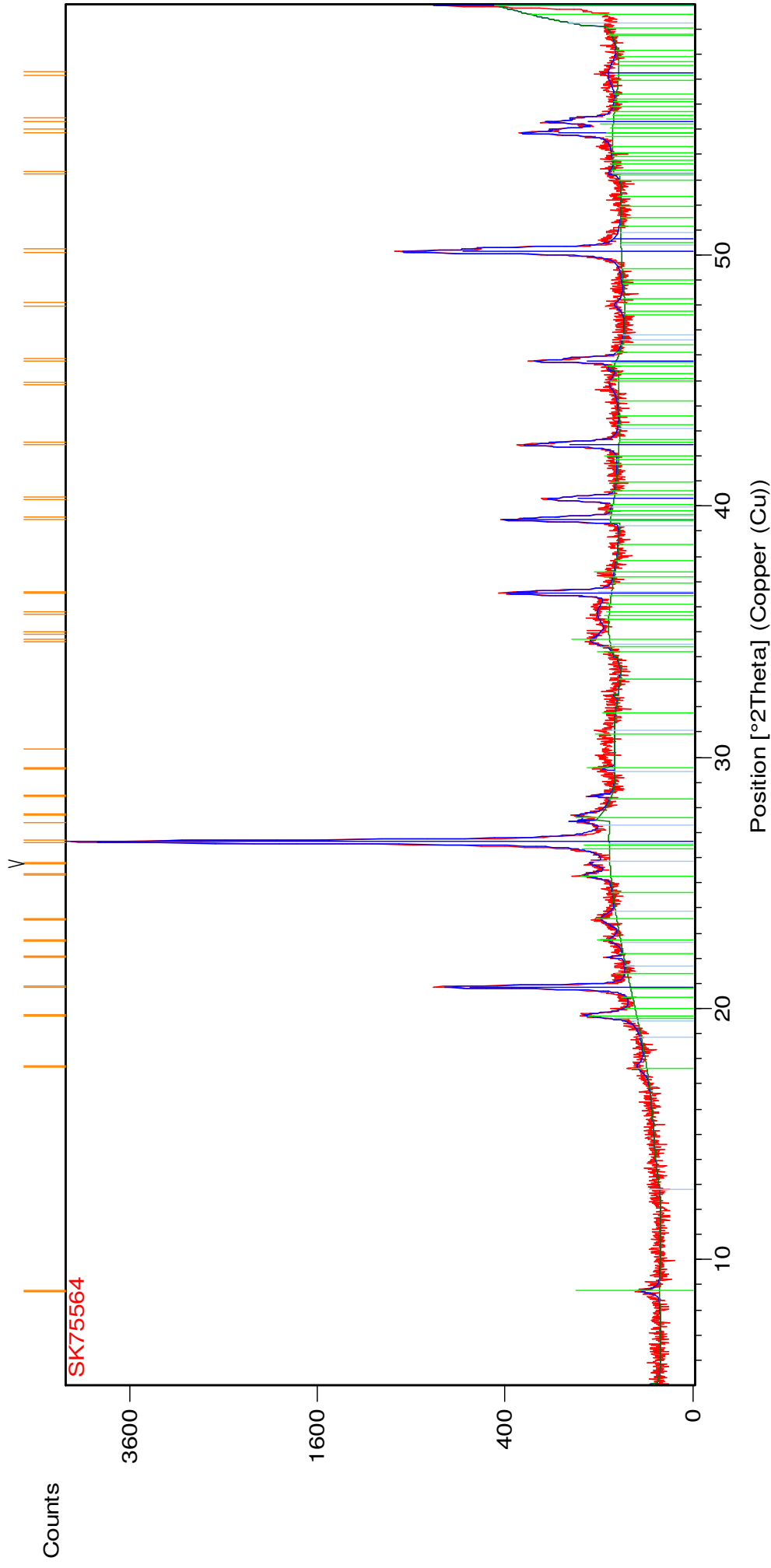
Peak List

96-101-1098; Si3.00 O6.00; Quartz low
01-070-β754; K ( Al4 Si2 O9 ( OH)3 ); Illite
00-003-0499; ( Na0.4 Ca0.6 ) Al1.6 Si2.4 O8; Labradorite
01-089-1455; K0.42 Na0.58 Ca0.03 ( Al Si3 O8 ); Sanidine



Peak List

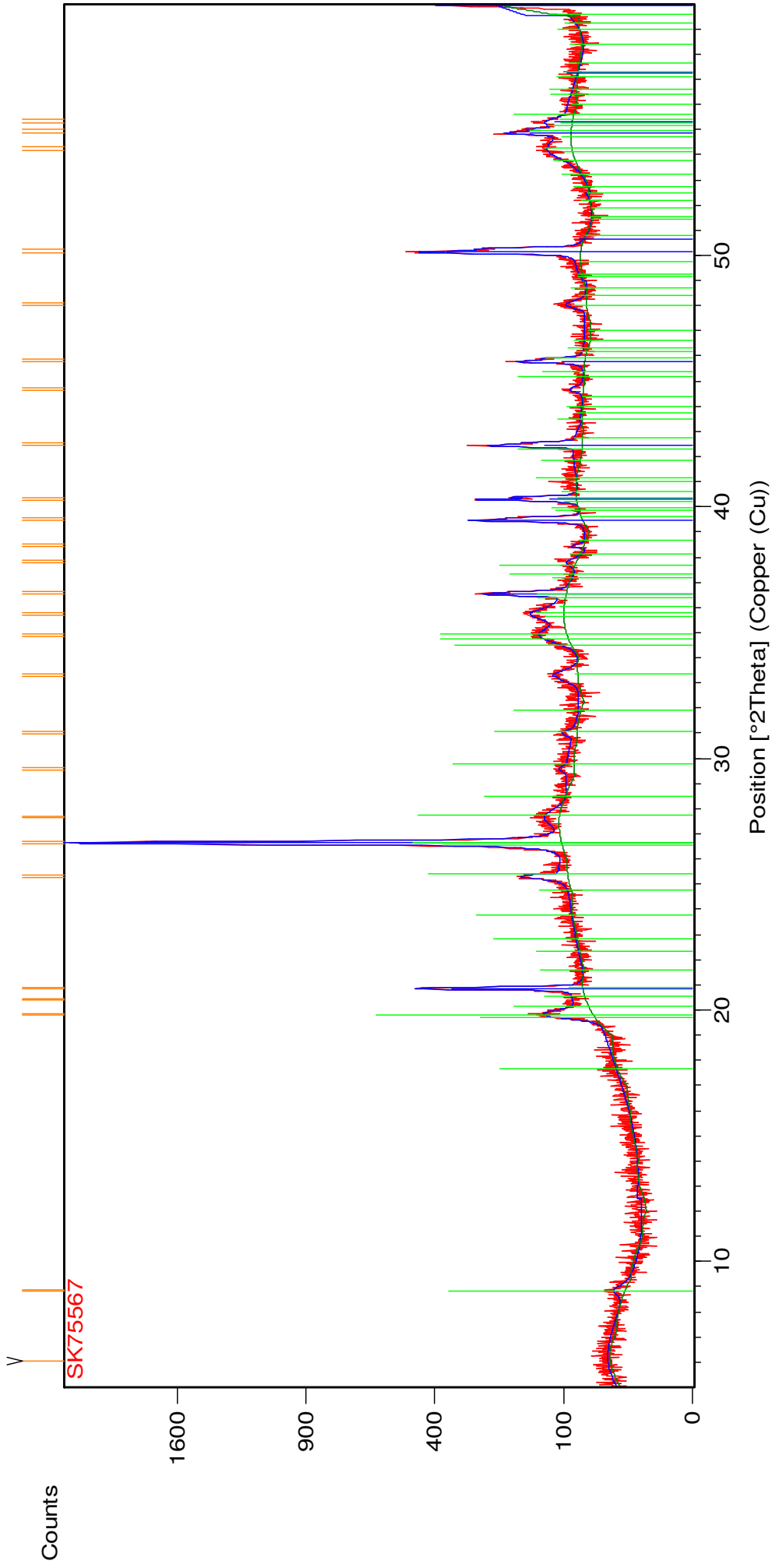
01-086-2237; Si O2; Quartz
96-900-5497; K1.90 Na0.10 Al9.12 Mg0.80 Fe1.12 Si12.96 O47.84 F0.16 H7.84; Phengite
00-041-1486; Ca Al2 Si2 O8; Anorthite, ordered
00-003-0413; Si O2 - Al2 O3 - Na - O H; Flusston



Peak List

01-085-0798; Quartz

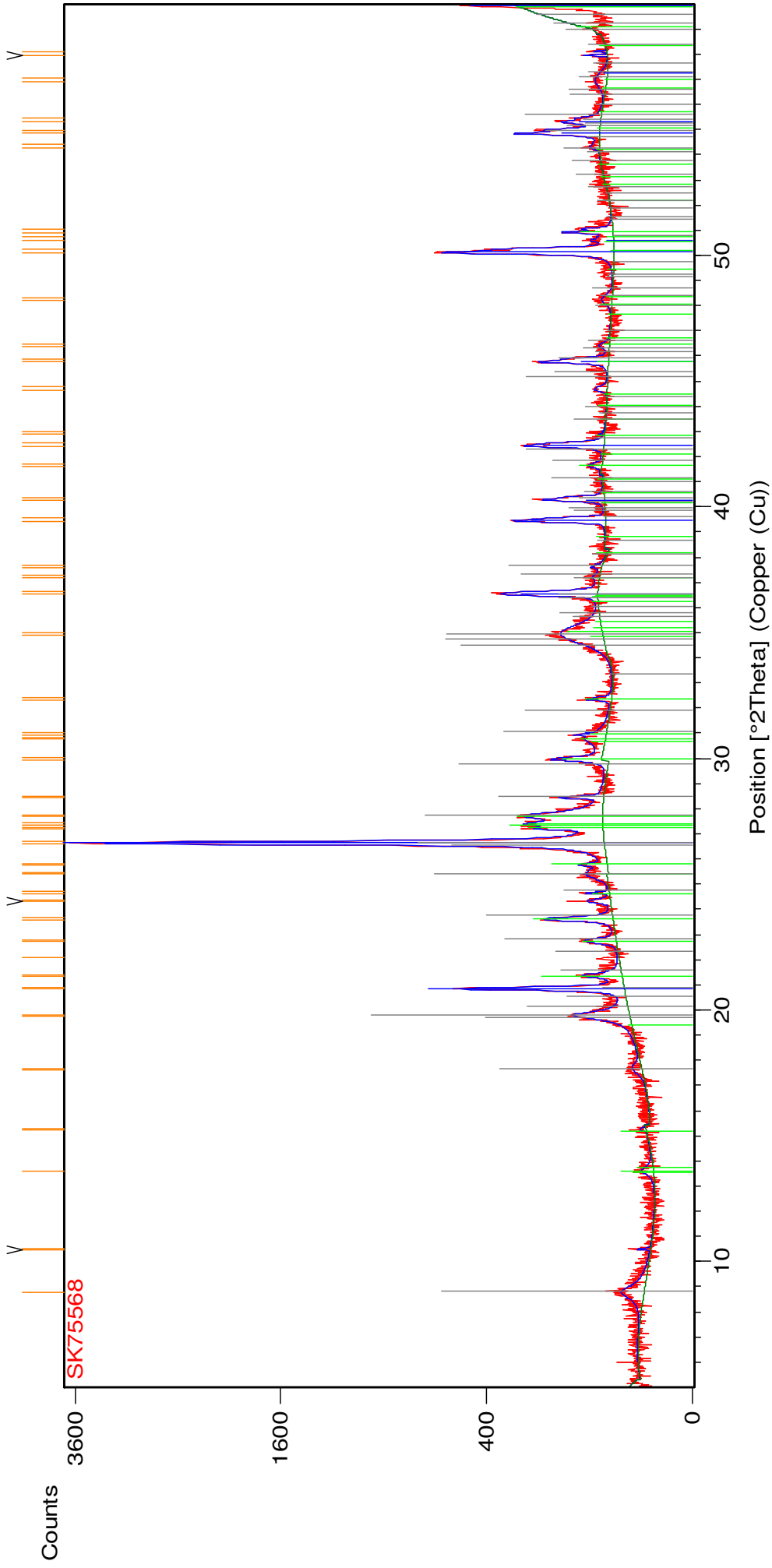
01-089-7537; Phengite 2M1, Fe-rich, heated



Peak List

01-085-0798; Quartz

01-070-3754; Illite

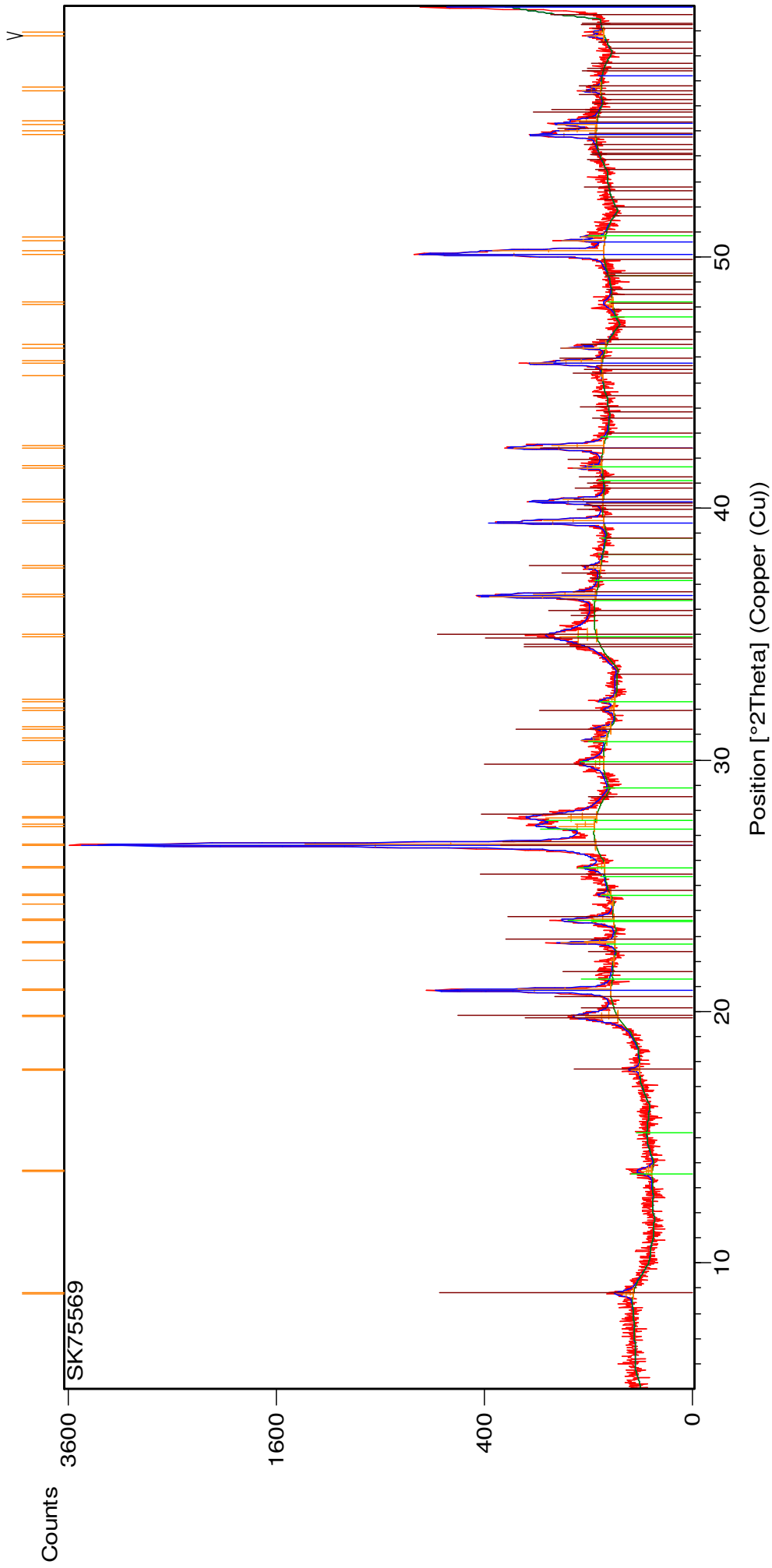


Peak List

03-065-0466; Quartz low, syn

00-019-1227; Sanidine

01-070-3754; Illite



Peak List

96-901-3322; Si3.00 O6.00; Quartz

00-013-0456; K0.47 Na0.43 Ca0.10 Al1.1 Si2.9 O8; Sandstone

01-087-0691; ( K.94 Na.06 ) ( Mg.08 Al1.75 Fe.15 Mn.02 ) ( Al.92 Si3.08 ) O10 ( O H ) 2; Muscovite-2(TM)RG#1, magnesian, manganese, manganese



