

Jeneralize İnteriktal Epileptik Anormallikler

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Tıp Fakültesi



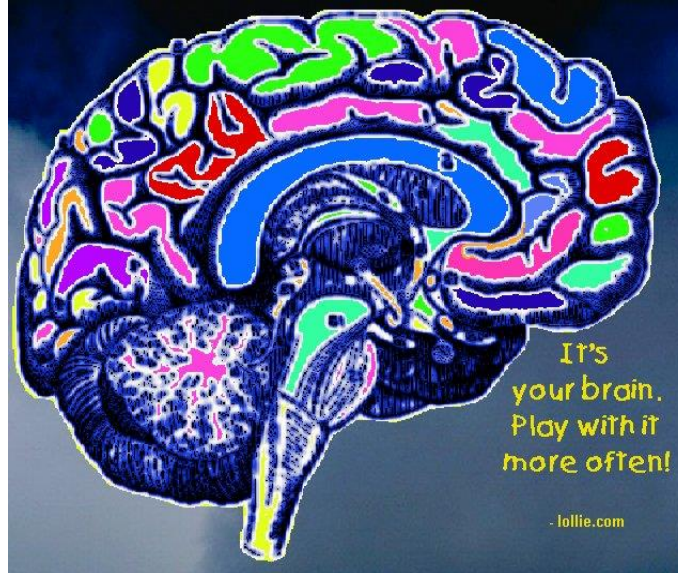
Jeneralize İnteriktal EEG Anomalileri

1935 → Gibbs ve ark. "diken ve dalga" deşarjlarını tanımladı



Jeneralize İnteriktal EEG Anomalileri

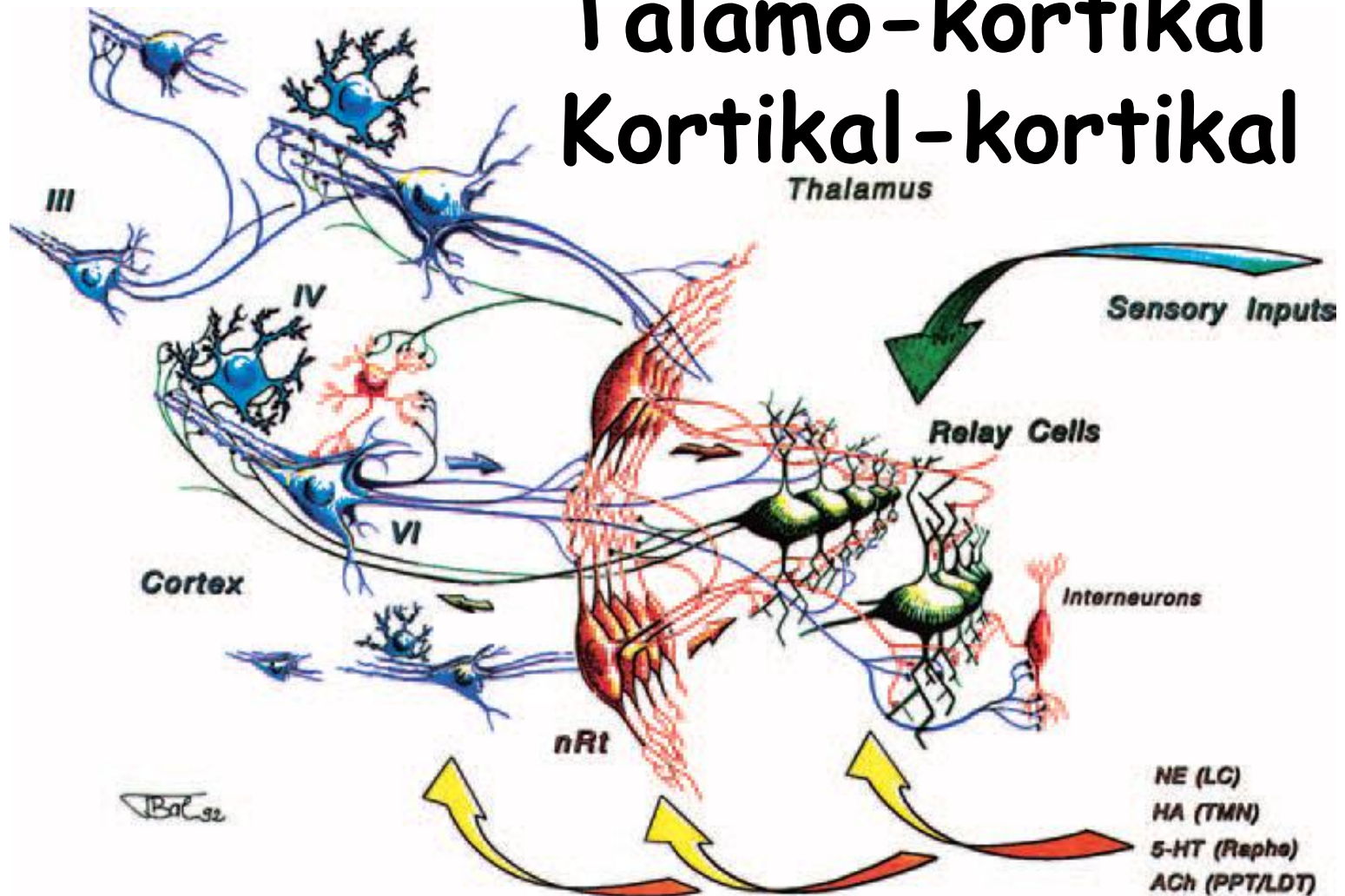
Her iki hemisferin karşılık gelen kısımlarında veya başın tümünde ortaya çıkan simetrik ,senkron deşarjlardır.



Jeneralize Epilepsi

1954'de Penfield ve Jasper jeneralize epileptiform deşarjların üst beyin sapındaki merkezlerden kaynaklandığını öne sürerek bu tip nöbetlere 'sentrensefalik epilepsi' adını vermişlerdir.

Kortiko-retikulär Talamo-kortikal Kortikal-kortikal



Jeneralize İnteriktal EEG Anomalileri

Dalga formları;

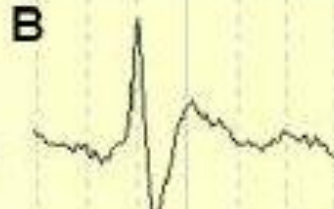
- Benzer görünüm
- Simetrik amplitüd
- Hemisferlerin karşılık gelen alanlarında eş zamanlı başlangıç
- Senkron zamanlama

Jeneralize Epileptik Aktivite

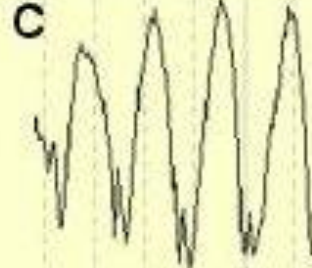
- Diken ve dalga aktivitesi
- Diken dalga kompleksleri
- Çoklu (multiple) diken ve dalgalar
- Hipsaritmi



Spike (< 70ms)



Sharp wave (70-200ms)



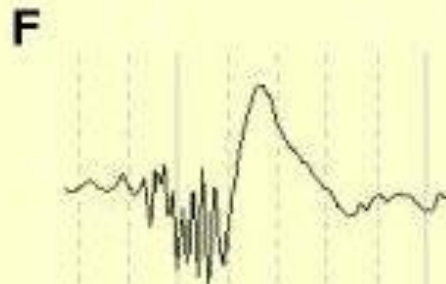
**Spike-wave
kompleksi**



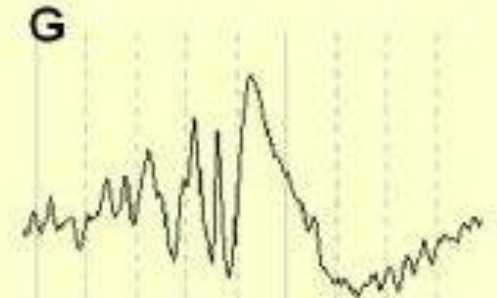
**Sharp-slow wave
kompleksi**



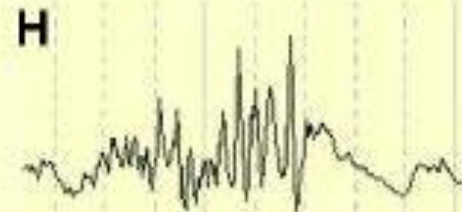
**Slow spike wave
kompleksi**



**Multiple Spike wave
kompleksi**



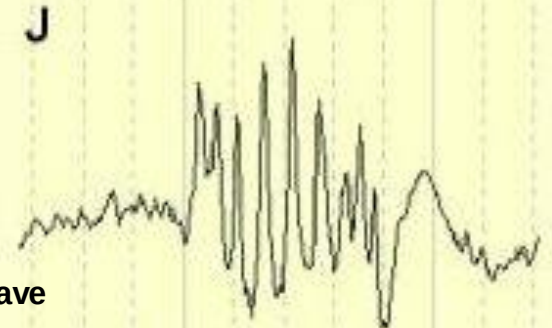
**Multiple sharp slow
wave kompleksi**



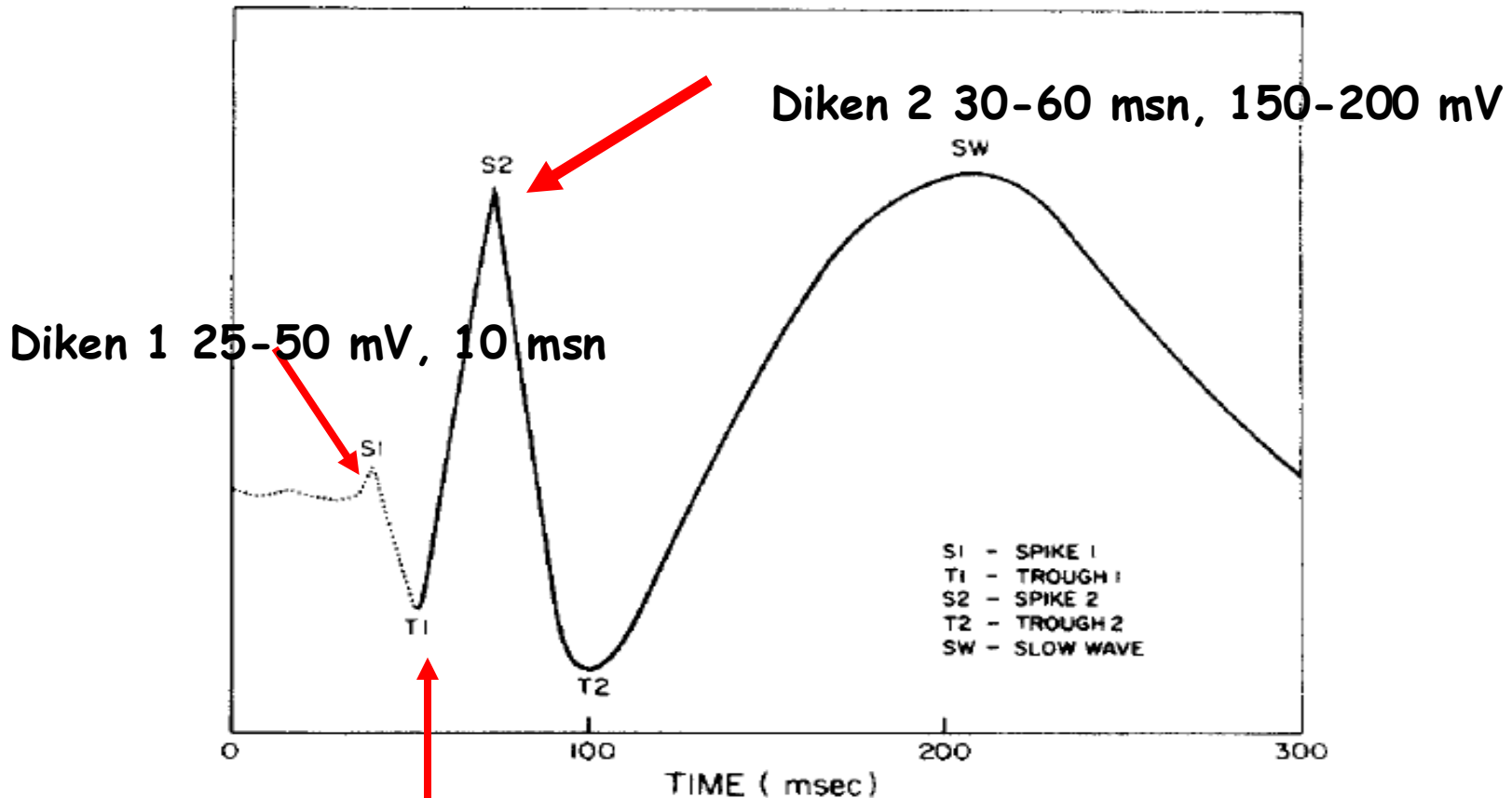
**Polispike
kompleksi**



**Multiple sharp wave
kompleksleri**



SPIKE - WAVE COMPLEX



Pozitif transient 100-150 msn

Lemieux J, 1986

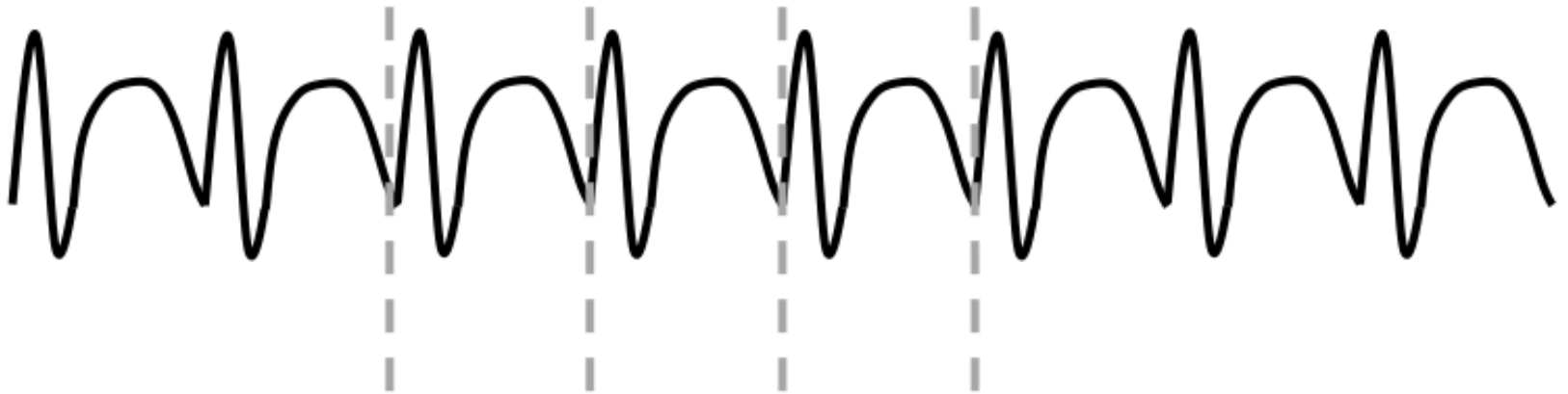
Frekans

Dalga sayısı /sn (Hertz-Hz)

<0.5/s, 0.5/s, 1/s, 1.5/s, 2/s, 2.5/s, 3/s, 3.5/s, or $\geq 4/s$.

Diken-dalga

Alternating spike and wave

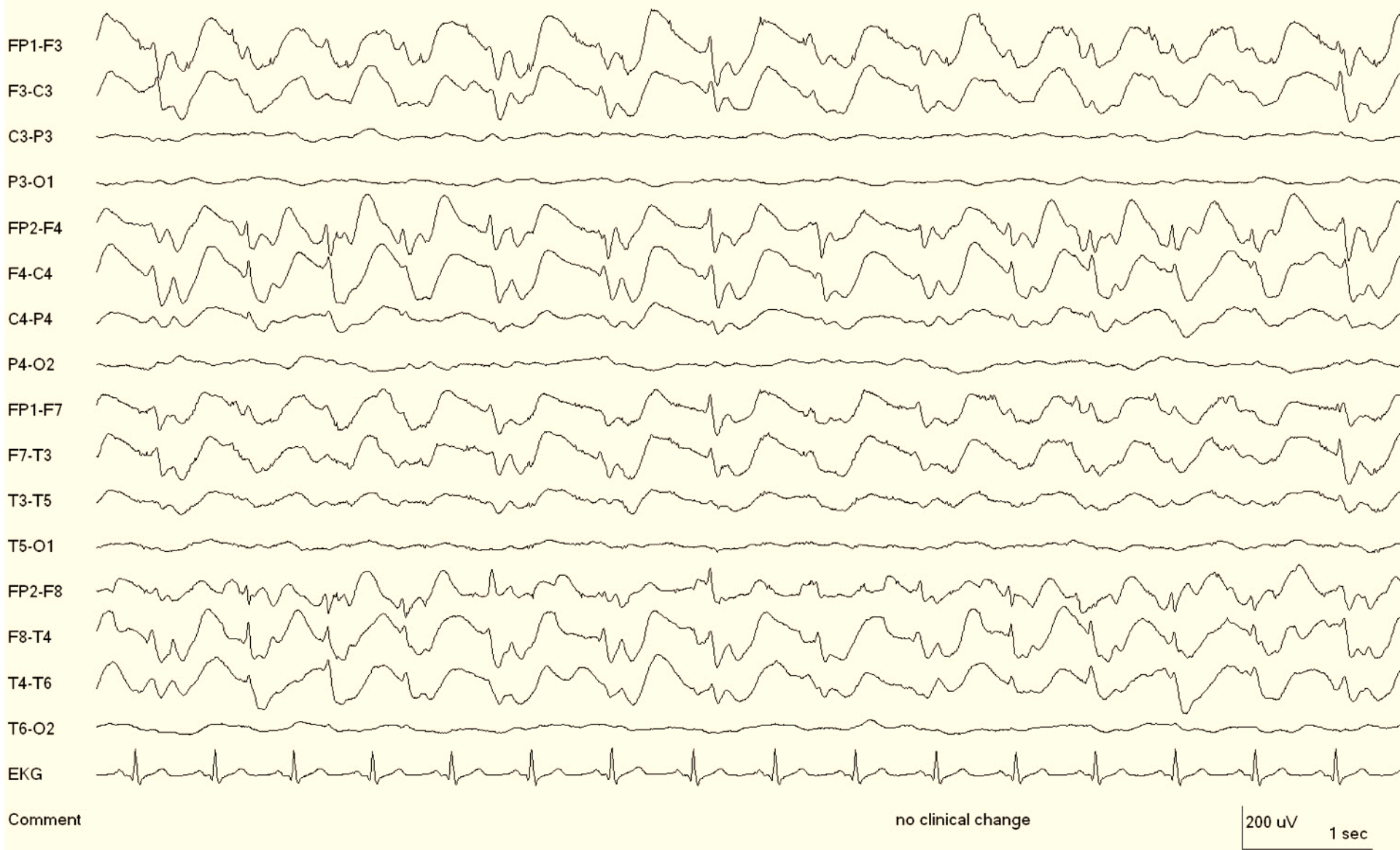


No interdischarge interval

Jeneralize Epileptik Aktivite

Diken dalga kompleksleri:

- 2.5-4 Hz diken ve dalga kompleksleri
- 1.5-2,5 Hz Yavaş diken ve dalgalar veya diken dalga kompleksleri
- Ritmik veya periodik diyebilmek için 6 cycle devam etmelidir.
(1/diken/sn için 6 sn, 3/diken/sn için 2 sn)



Jeneralize yavaş-diken dalga

Jeneralize Epileptik Aktivite

Diken dalga kompleksleri:

- 2.5-4 Hz diken ve dalga kompleksleri
- 1.5-2,5 Hz Yavaş diken ve dalgalar veya diken dalga kompleksleri
- Oksipital ritmik delta (OIRDA)
- Epileptik K-kompleksler
- Fotosensitivite
(göz kapama hipersensitivitesi, fiksasyon off)

Jeneralize Epileptik Aktivite Provokasyon Metodları

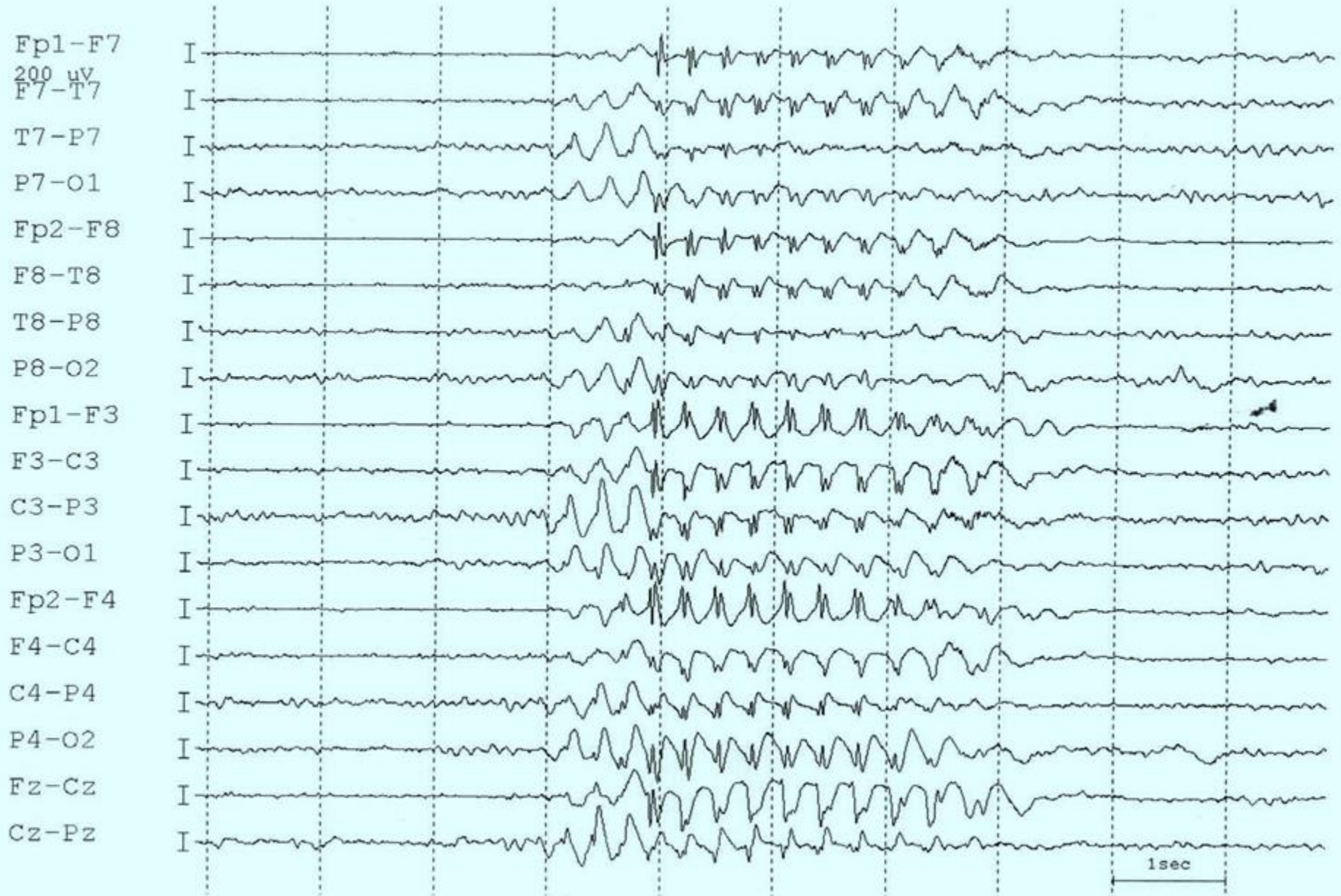
- Göz açma, kapama
- Hiperventilasyon
- Fotik stimülasyon
- Sirkadiyen ritm
- Uykusuzluk, uyandırılma
- Okuma
- Düşünme
- Konuşma

Jeneralize Epileptik Aktivite ve Uyku



- Uyandırılma
- Uykudan uyanıklığa geçiş
- Uyuklama-Devre 1 uykuda artma
- REM Uykusunda kaybolma
- Yavaş uykuda parçalanma
(fragmentasyon veya düzensizlik)

3Hz Diken Dalga Kompleksleri



Yavaş diken dalga kompleksleri

Fp1-F7

50 μ V

F7-T7

T7-P7

P7-O1

Fp2-F8

F8-T8

T8-P8

P8-O2

Fp1-F3

F3-C3

C3-P3

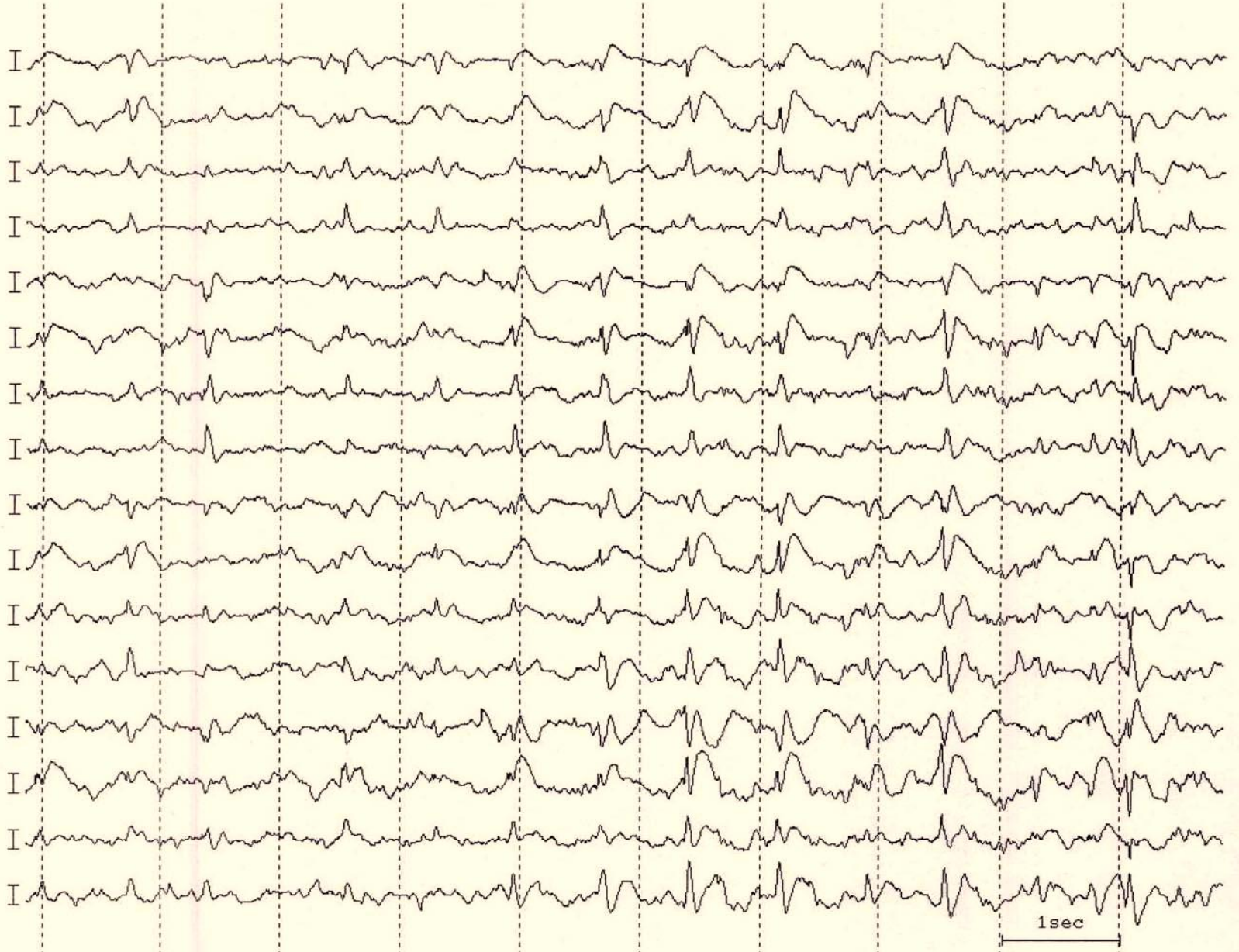
P3-O1

Fp2-F4

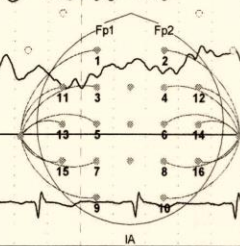
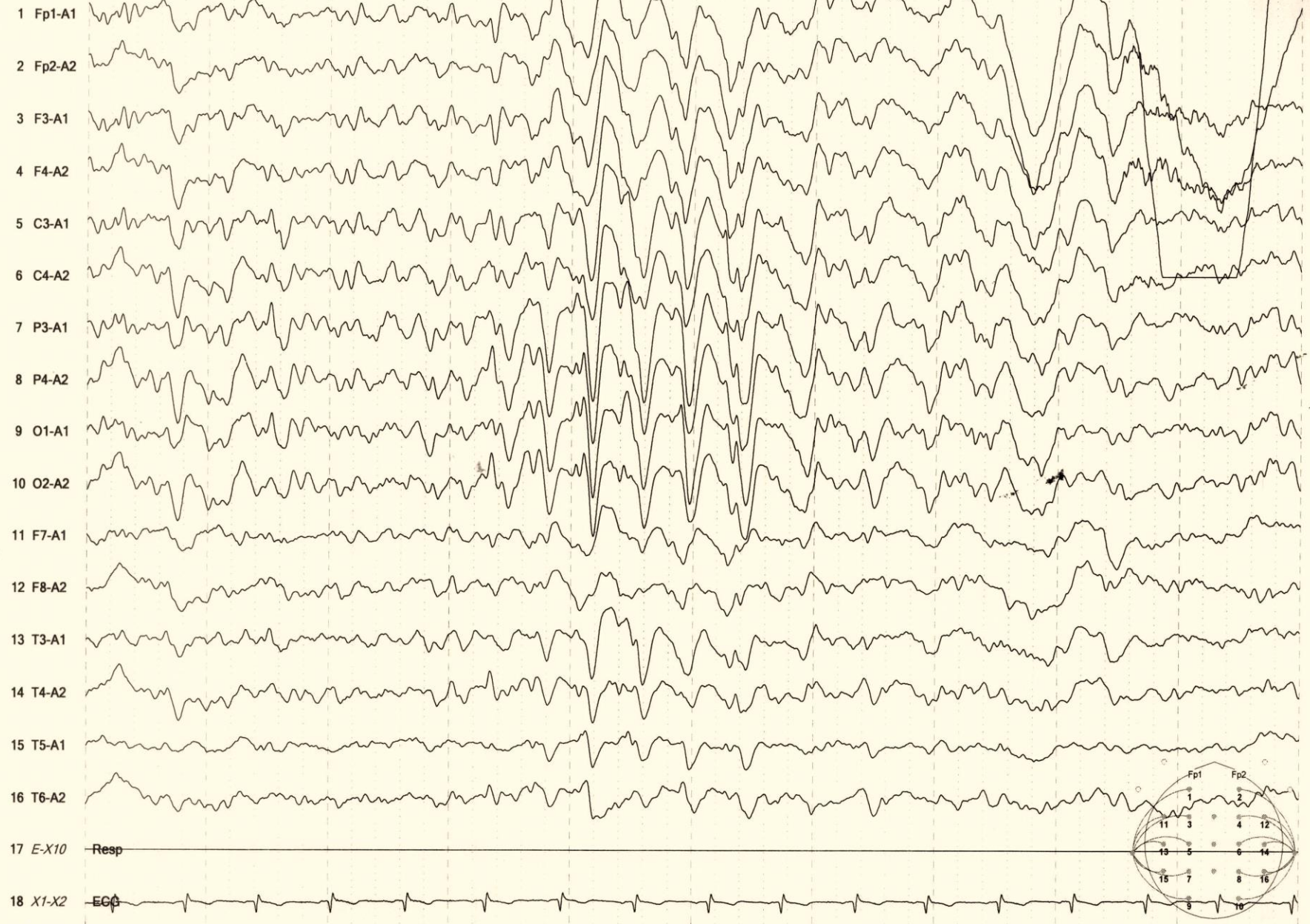
F4-C4

C4-P4

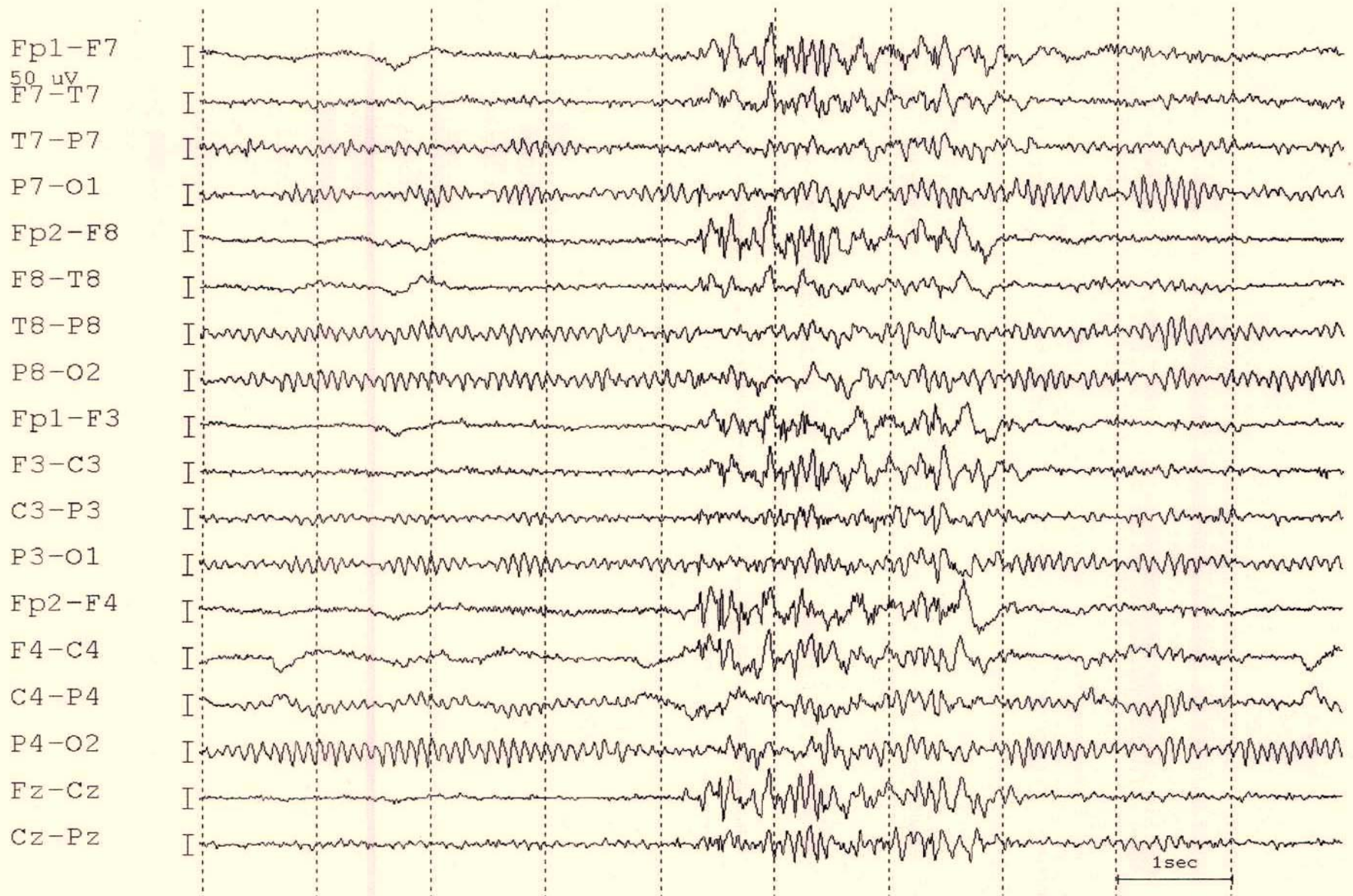
P4-O2

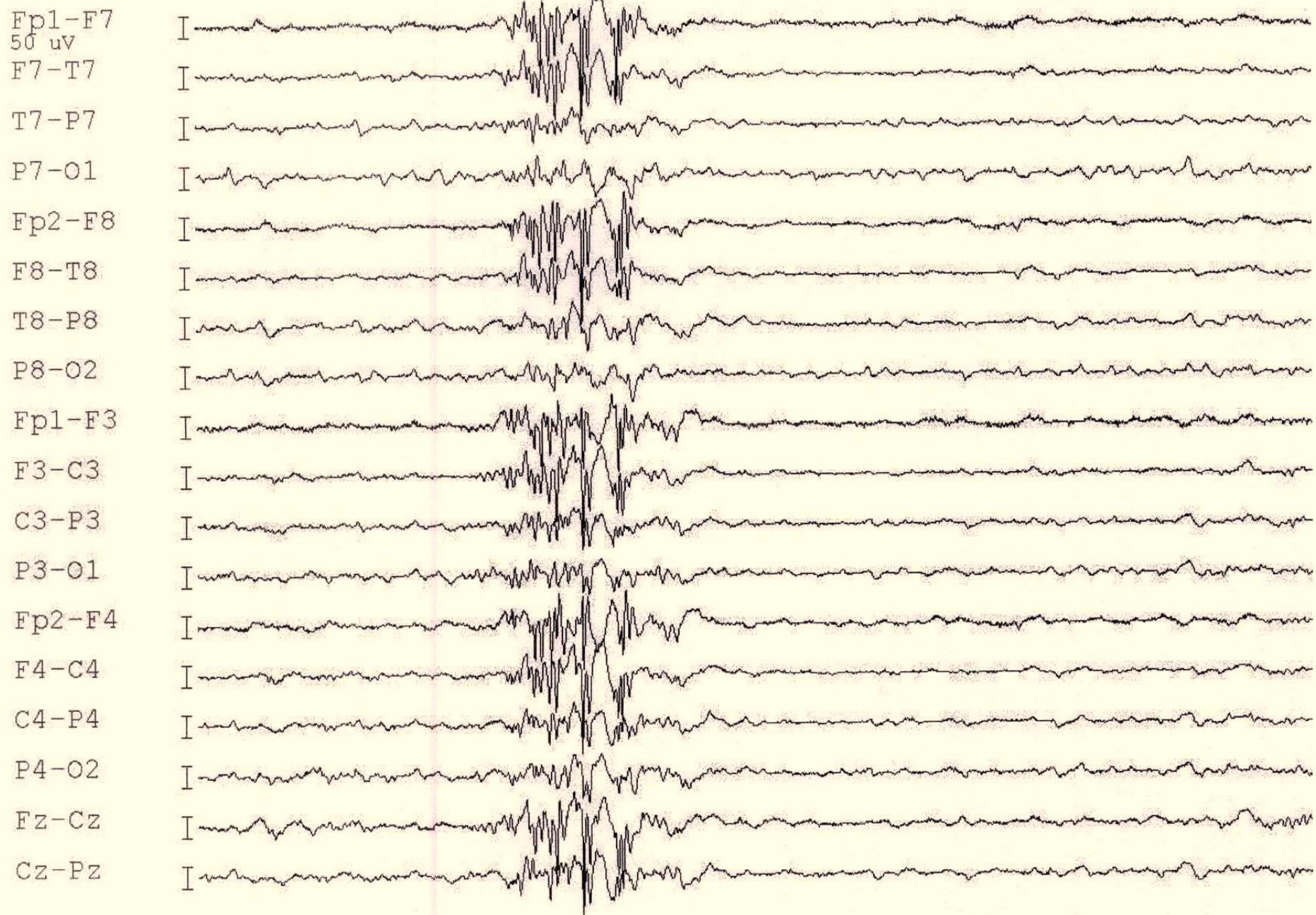


SENS 14:11:14[0000:02:04] [SENS *7 HF *15 TC *0.3 CAL *50]
70uV Patt. *IA ACfilt. *ON Refer. *OFF Reset *OFF
x1



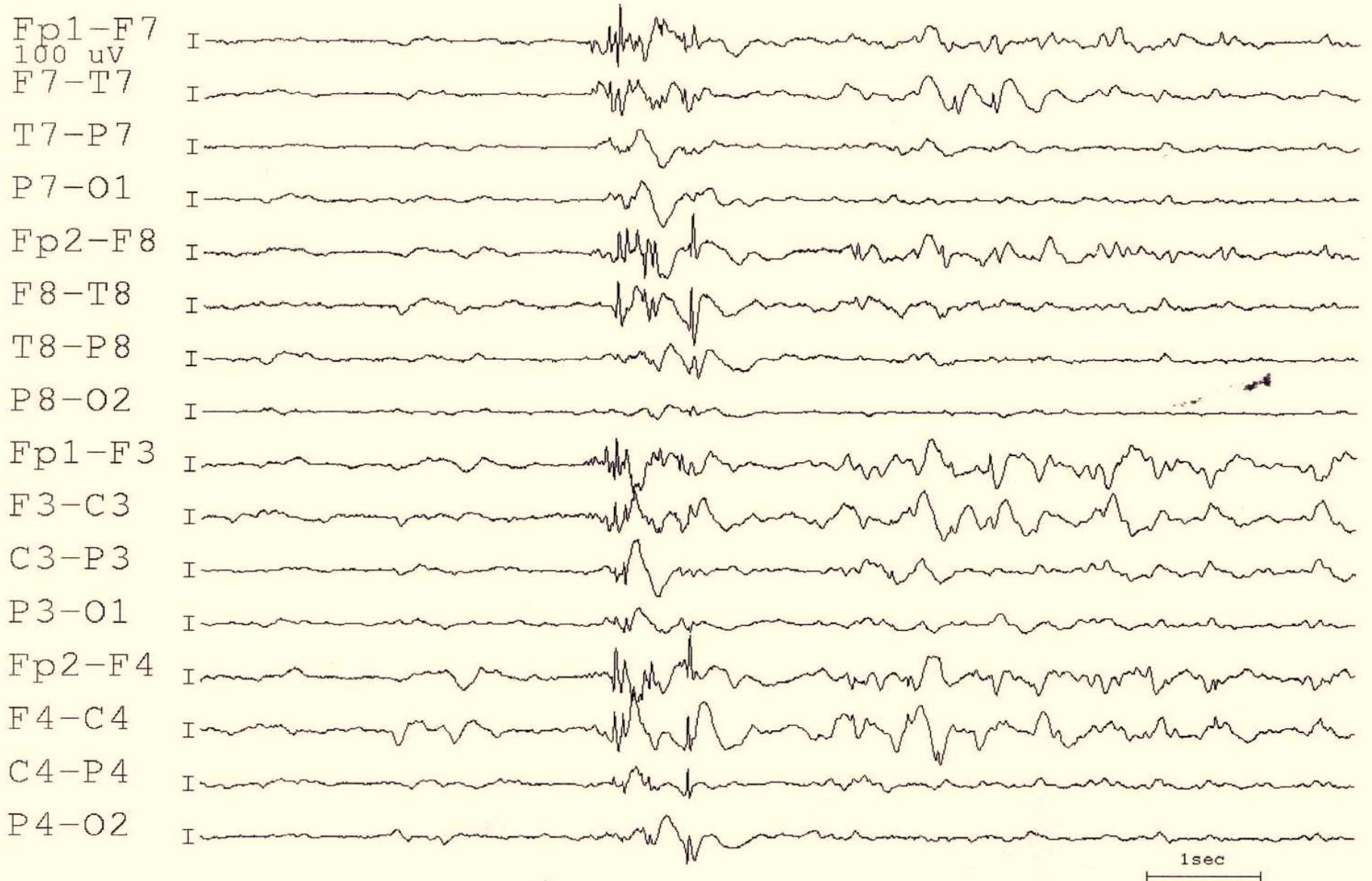
Çoklu diken dalga aktivitesi





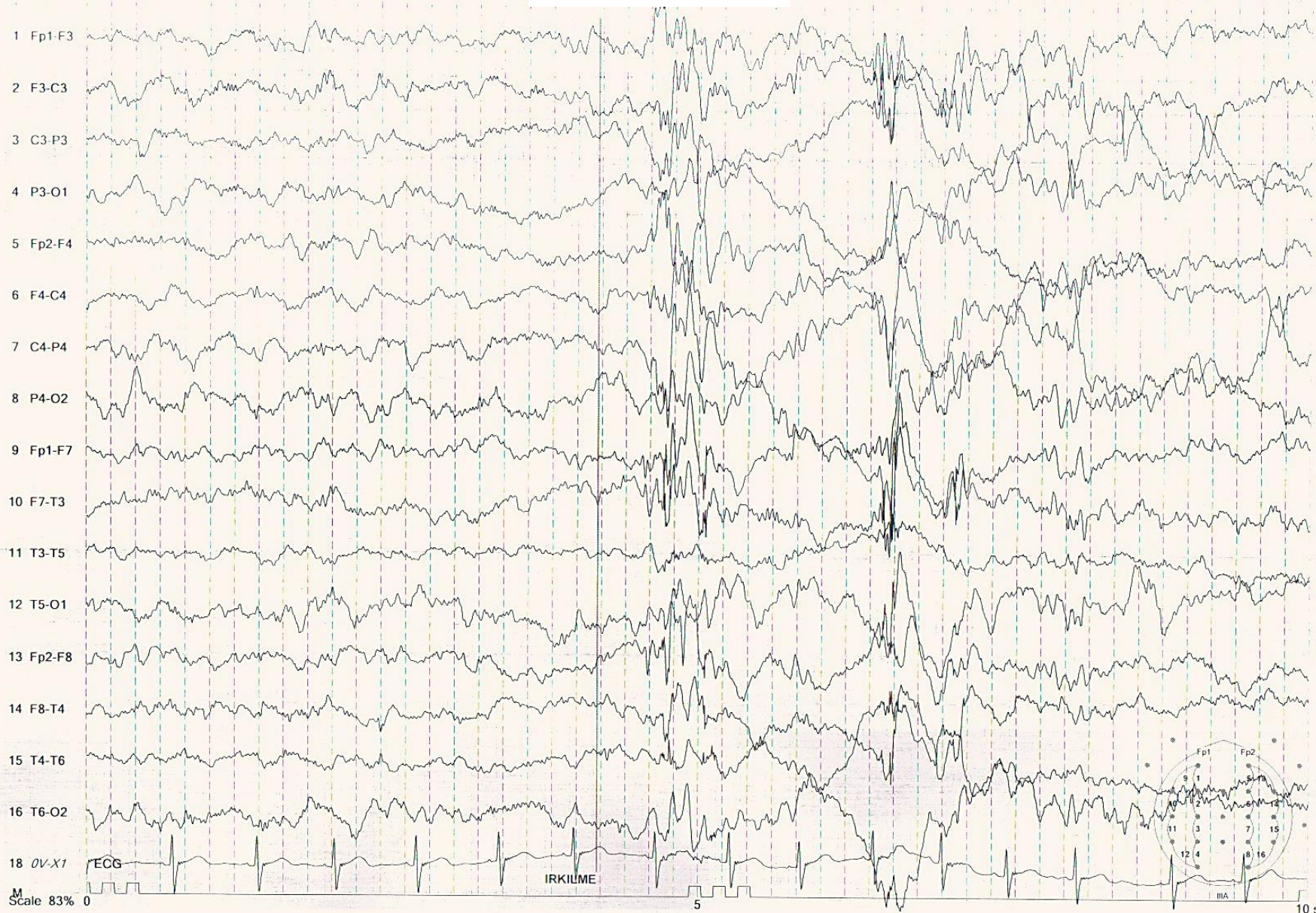
20 Hz Çoklu Diken Dalga

Çoklu Diken Dalga



Epileptik K-Kompleksleri





Jeneralize Epilepsilerde Atipik EEG bulguları

- Amplitüd asimetrisi
- Fokal başlangıç
- Fokal bitiş
- Fokal epileptiform deşarjlar
- Anormal morfoloji
- Jeneralize paroksismal hızlı aktivite

SENS 150uV
x1

16:18:43[0000:03:15]

[SENS *15 HF *30 TC *0.1 CAL *50]

Patt. IIIA ACfilt. *ON Refer. OFF Reset *OFF

002

Page

1

1 Fp1-F3

2 F3-C3

3 C3-P3

4 P3-O1

5 Fp2-F4

6 F4-C4

7 C4-P4

8 P4-O2

9 Fp1-F7

10 F7-T3

11 T3-T5

12 T5-O1

13 Fp2-F8

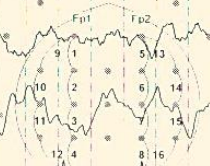
14 F8-T4

15 T4-T6

16 T6-O2

18 0V-X1 ECG

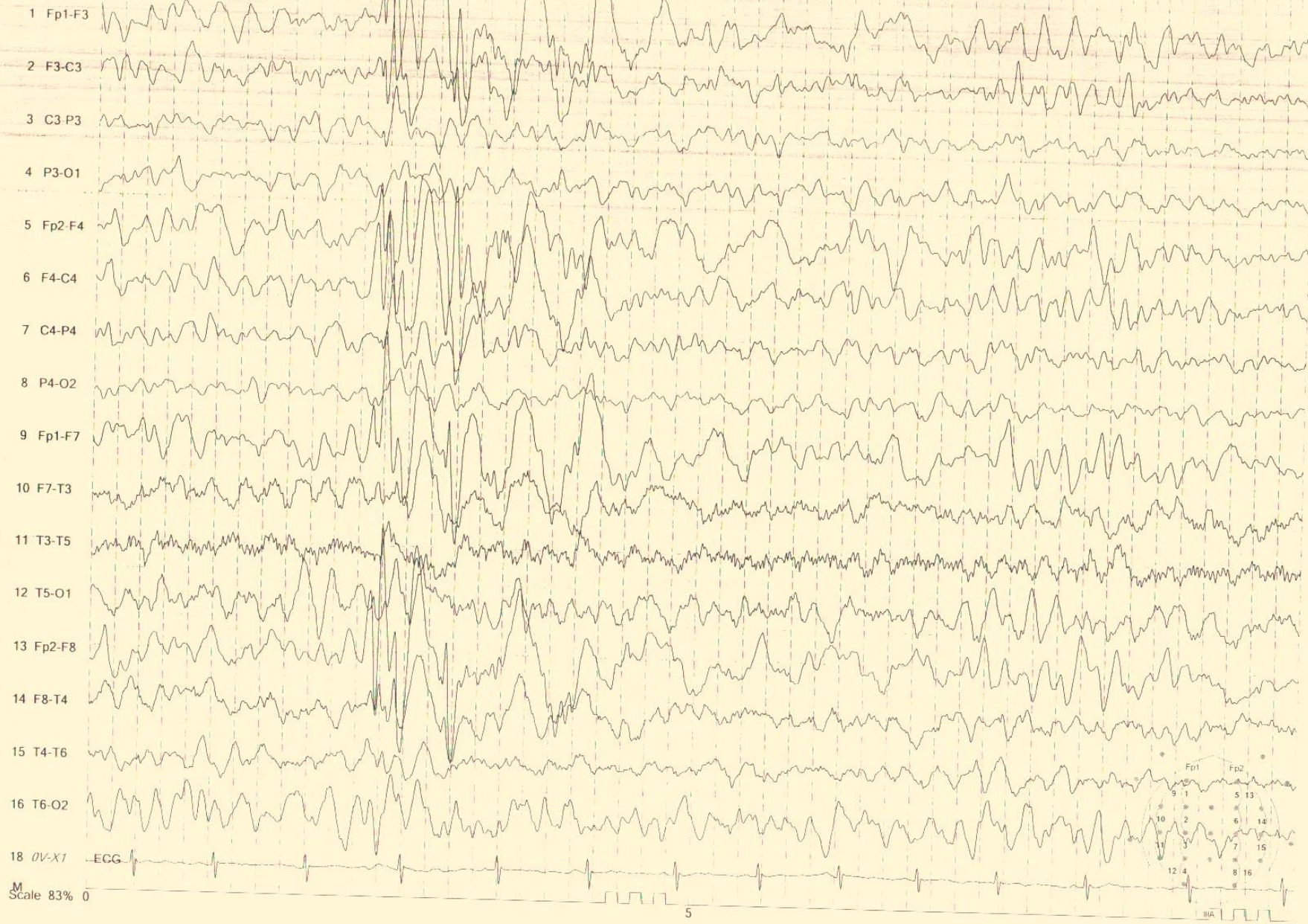
Scale 83% 0

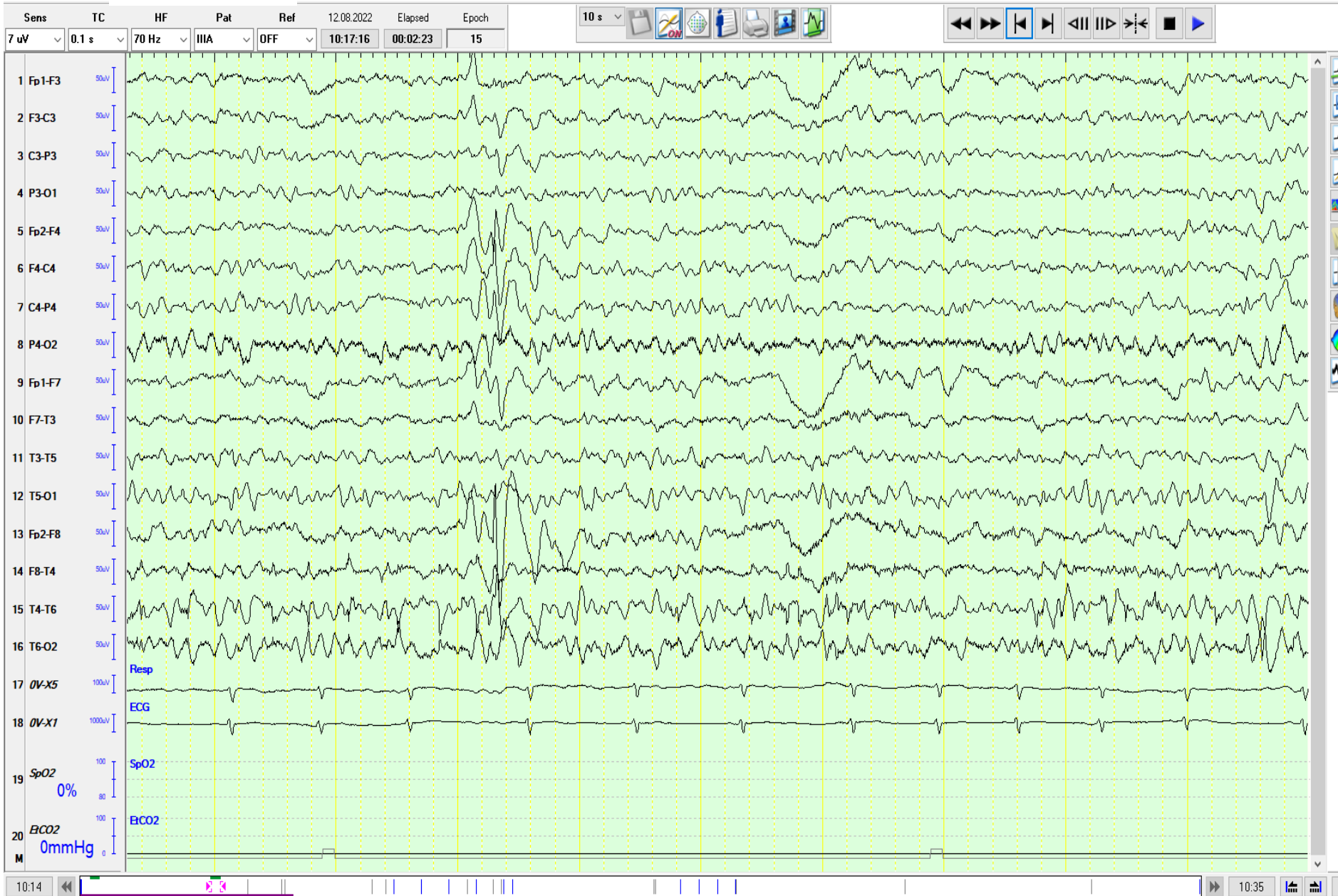


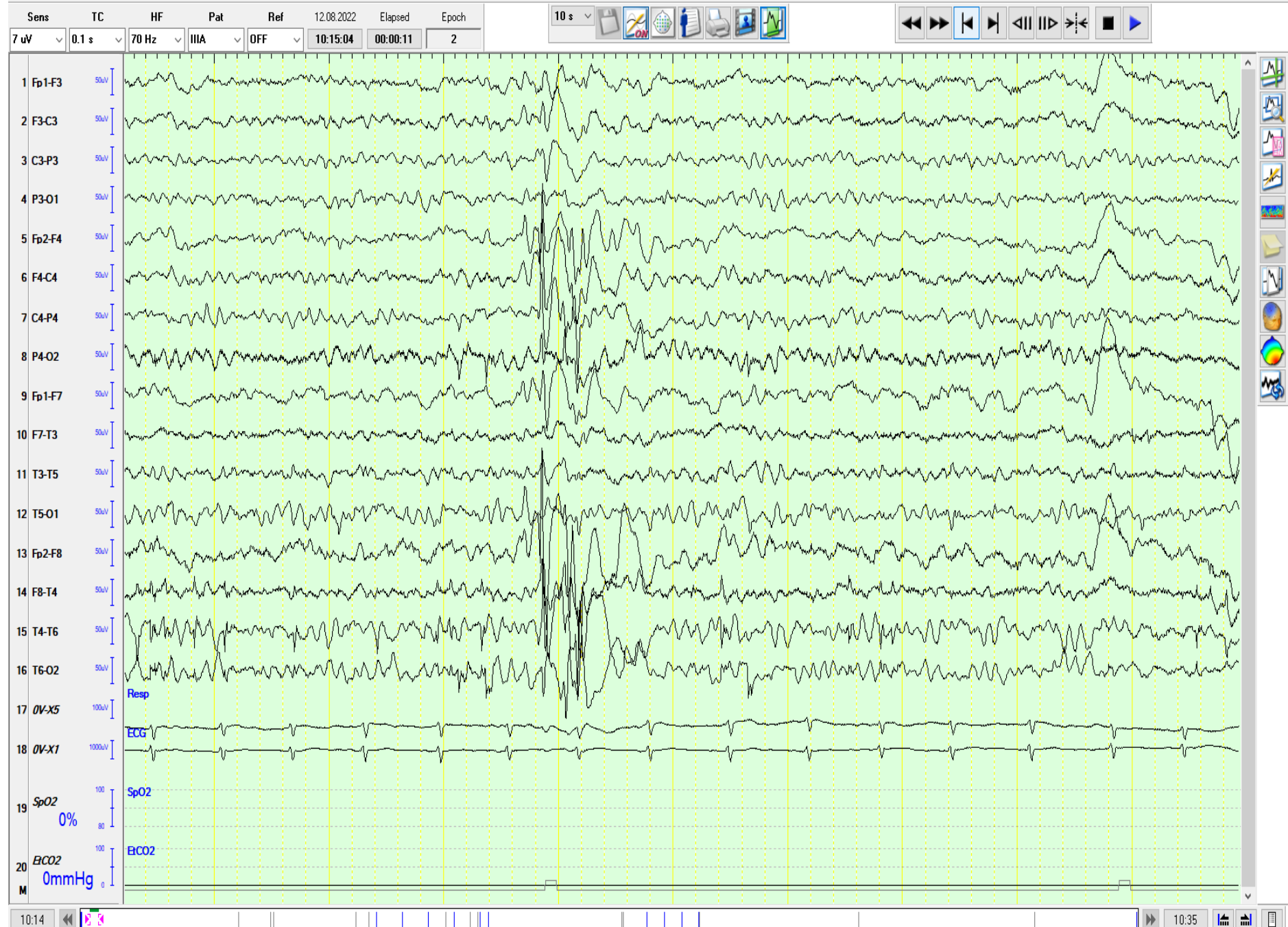
SENS 16:20:44[0000:05:16] [SENS *10 HF *30 TC *0.1 CAL *50]
100uV x1 Patt. IIIA ACfilt. *ON Refer. OFF Reset *OFF

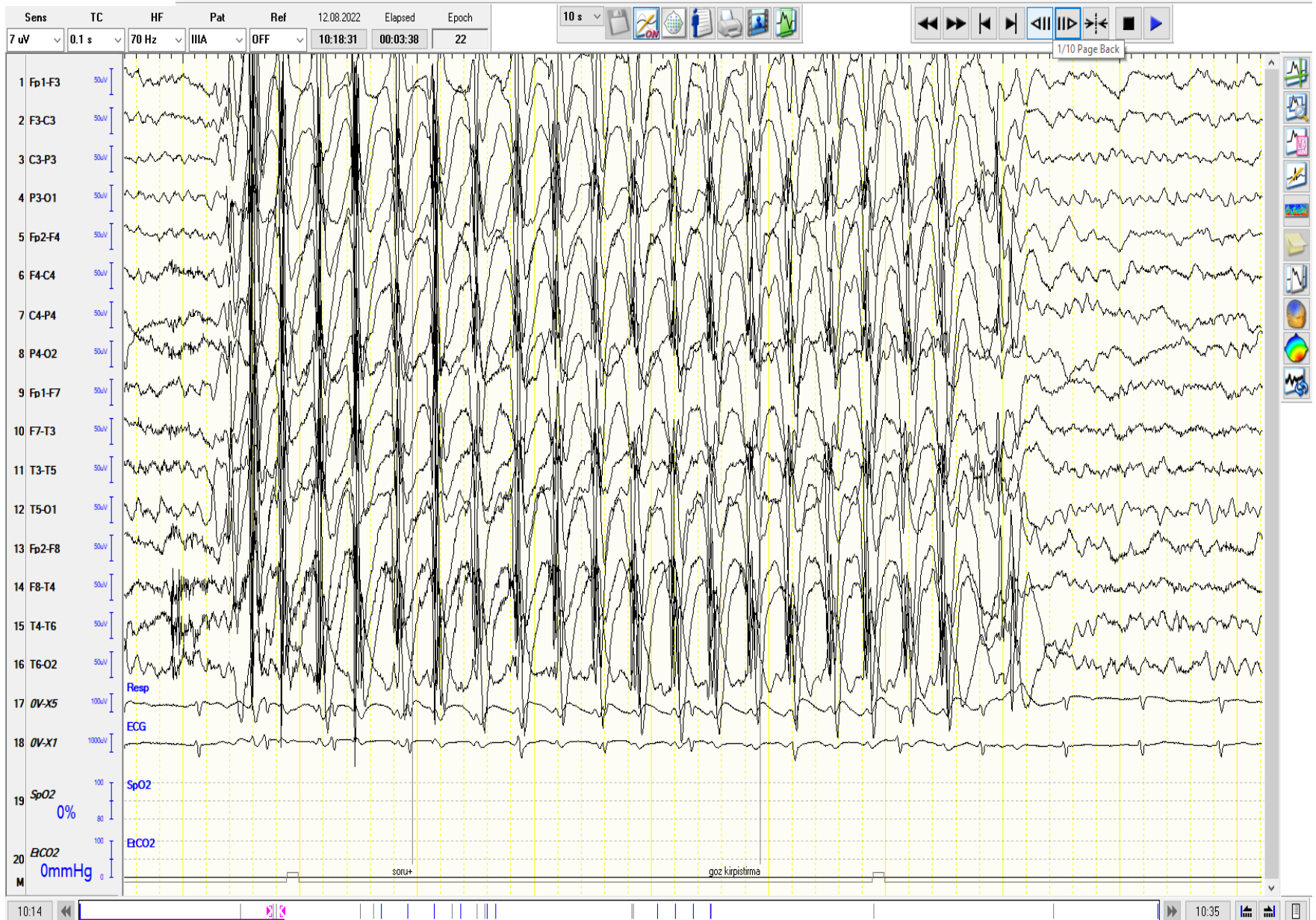
0: 002

Page 1









EEG correlates of seizure freedom in genetic generalized epilepsies

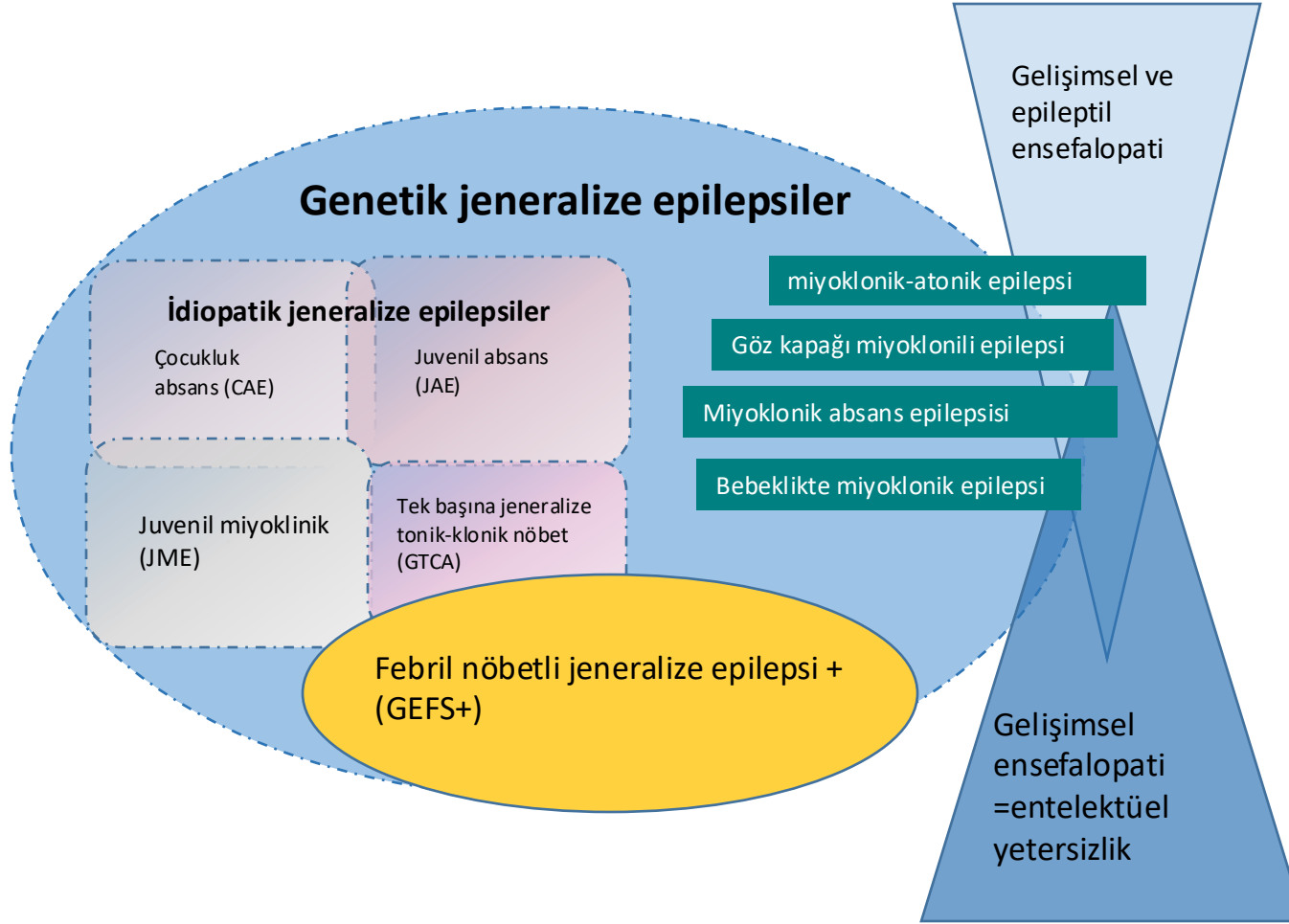
Udaya Seneviratne, FRACP, PhD; Ray C. Boston, PhD; Mark Cook, MD, FRACP; Wendy D'Souza, FRACP, PhD

Table 2 Results of EEG scores

	Mean (SD)	Median (IQR)
Total spike density	4.90 (8.26)	1.39 (0.32-5.16)

- Total diken yoğunluğu
- Uyanıklık ve uykuda diken yoğunluğu
- Epileptik deşarjların süresi >2sn anlamlı
- Atipik bulgular anlamsız

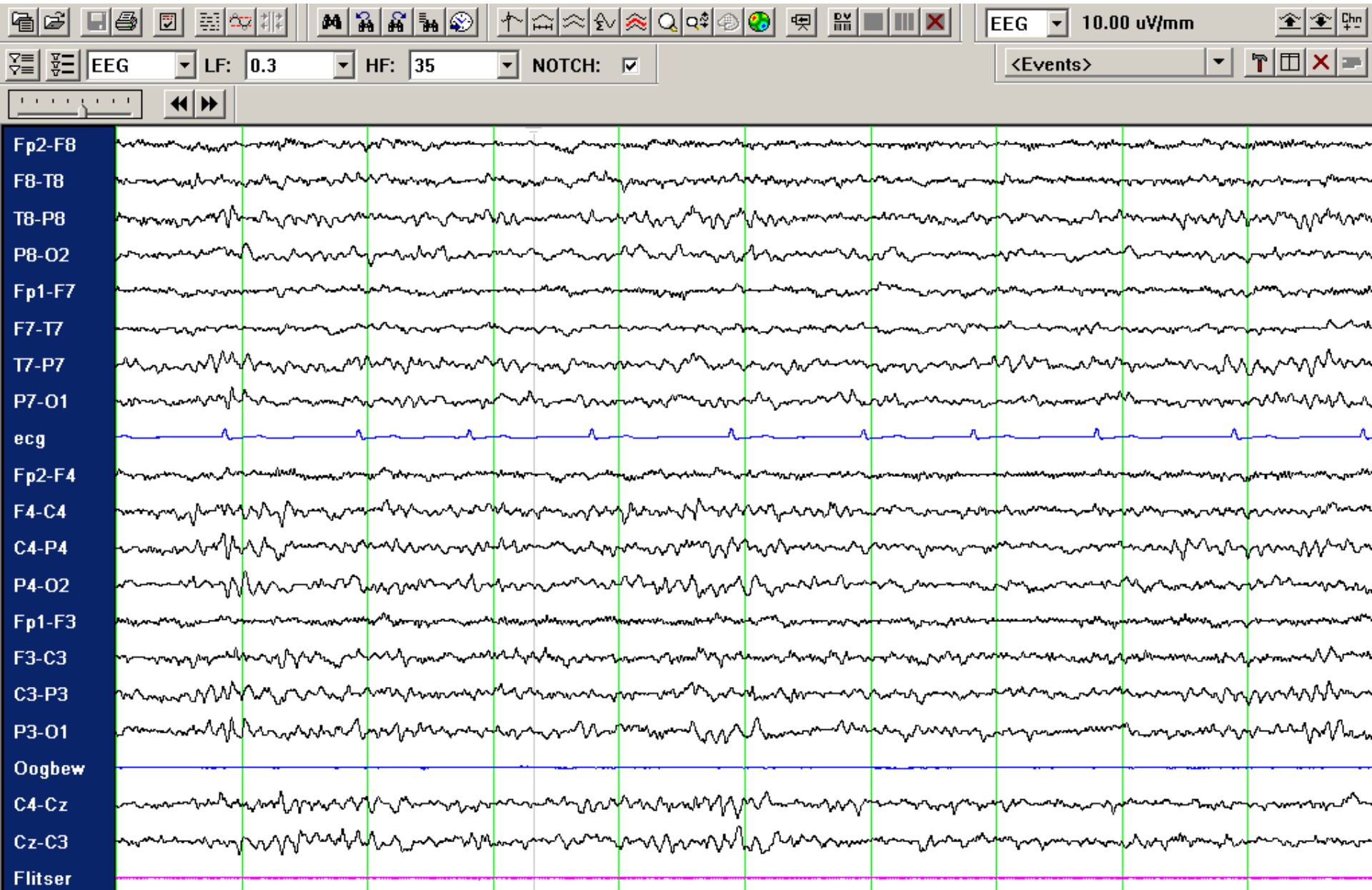
Abbreviation: IQR = interquartile range.



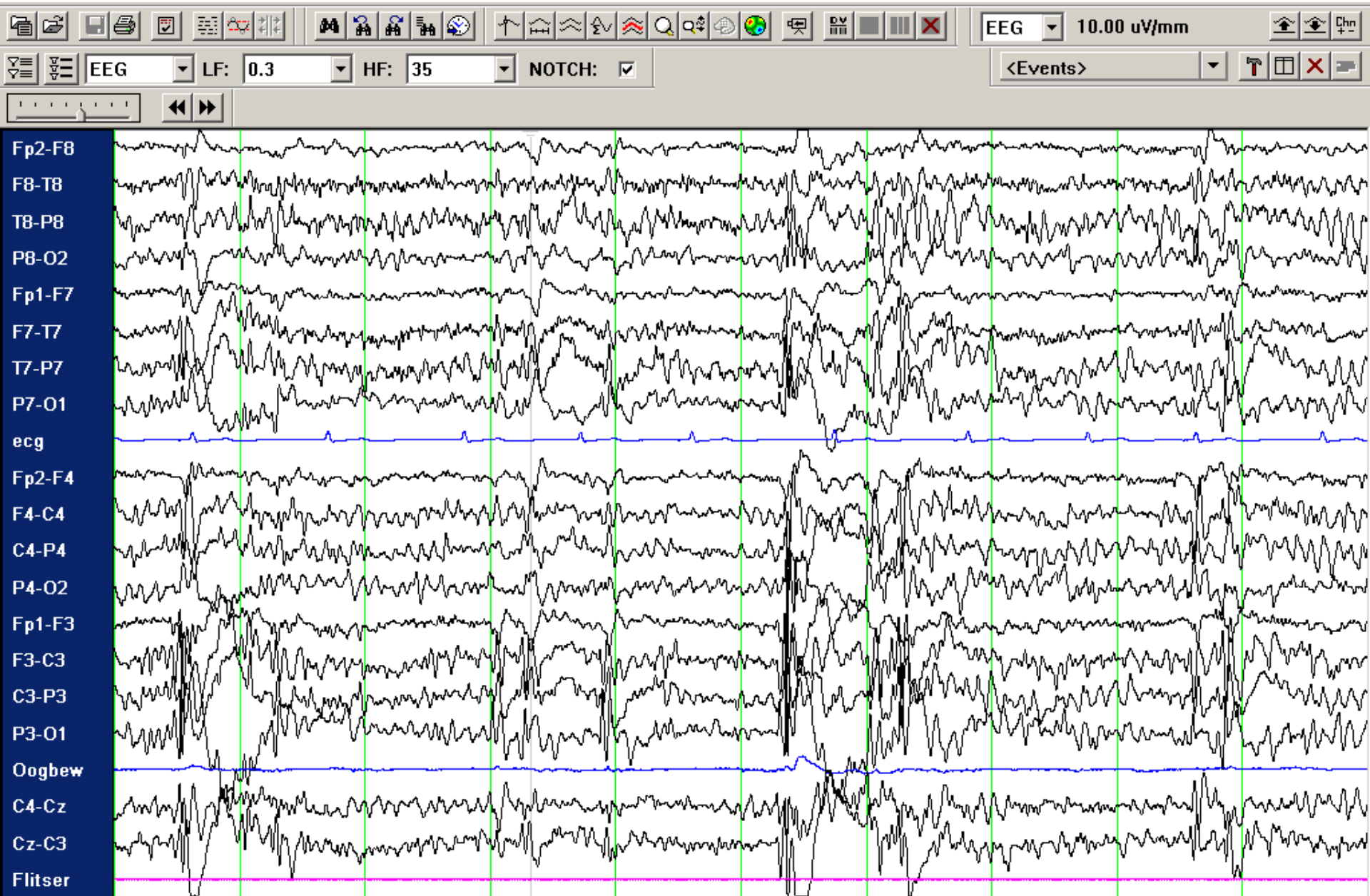
Juvenil Myoklonik Epilepside EEG

- Jeneralize bisenkron, simetrik çoklu diken dalga
 - Fronto-santral maksimum
- Hızlı diken dalga , düzensiz diken-dalga, 2.5-3.5 Hz diken dalga, yavaş diken dalga
- Fokal bulgular (şift yapan asimetrik iktal bulgular veya fokal yavaş dalgalar)
- Fotosensitivite (%30-50)
- Göz-kapama sensitivitesi

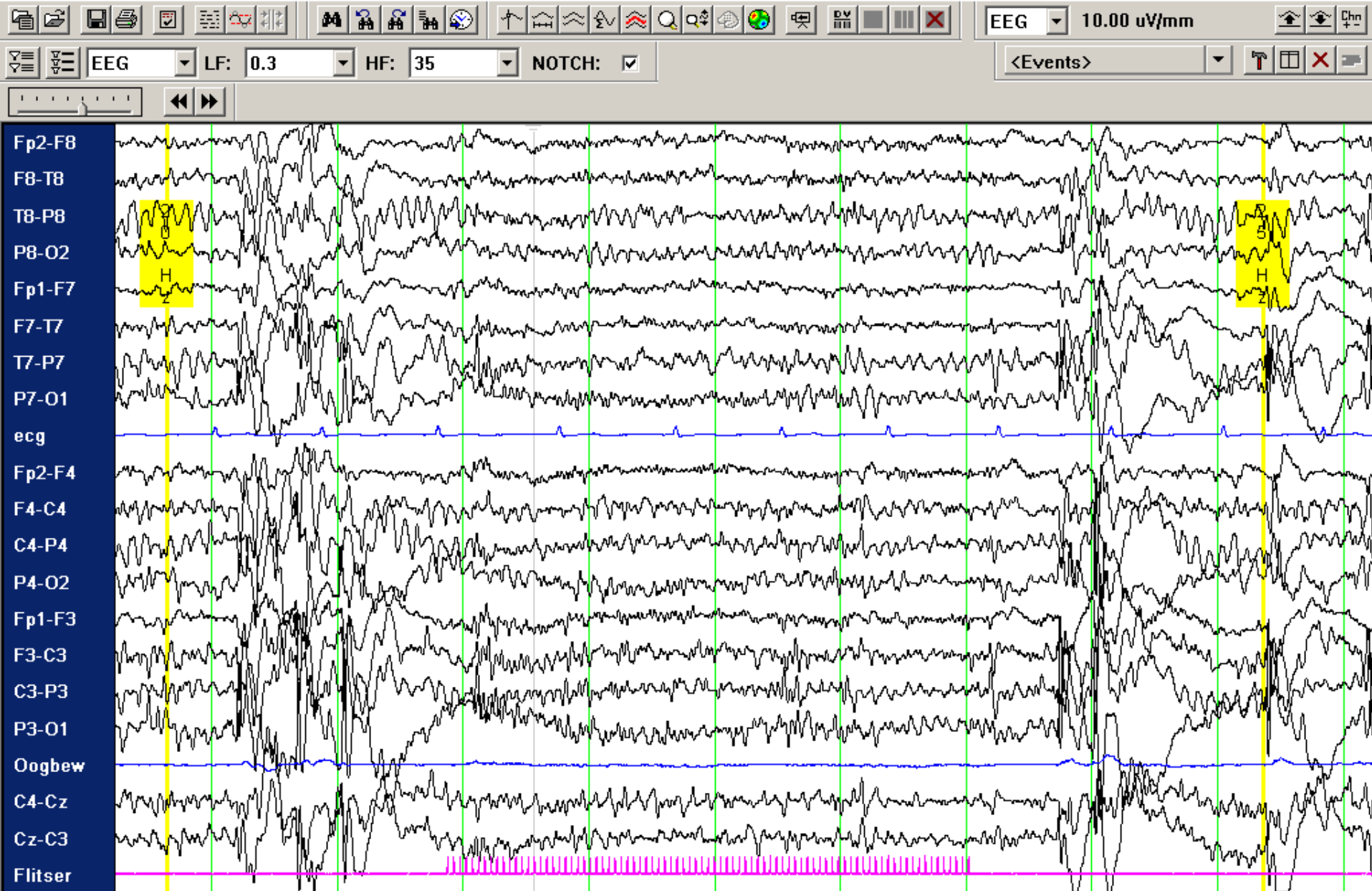
18 yaşında kız çocuğu, gözleri açık zemin aktivitesi

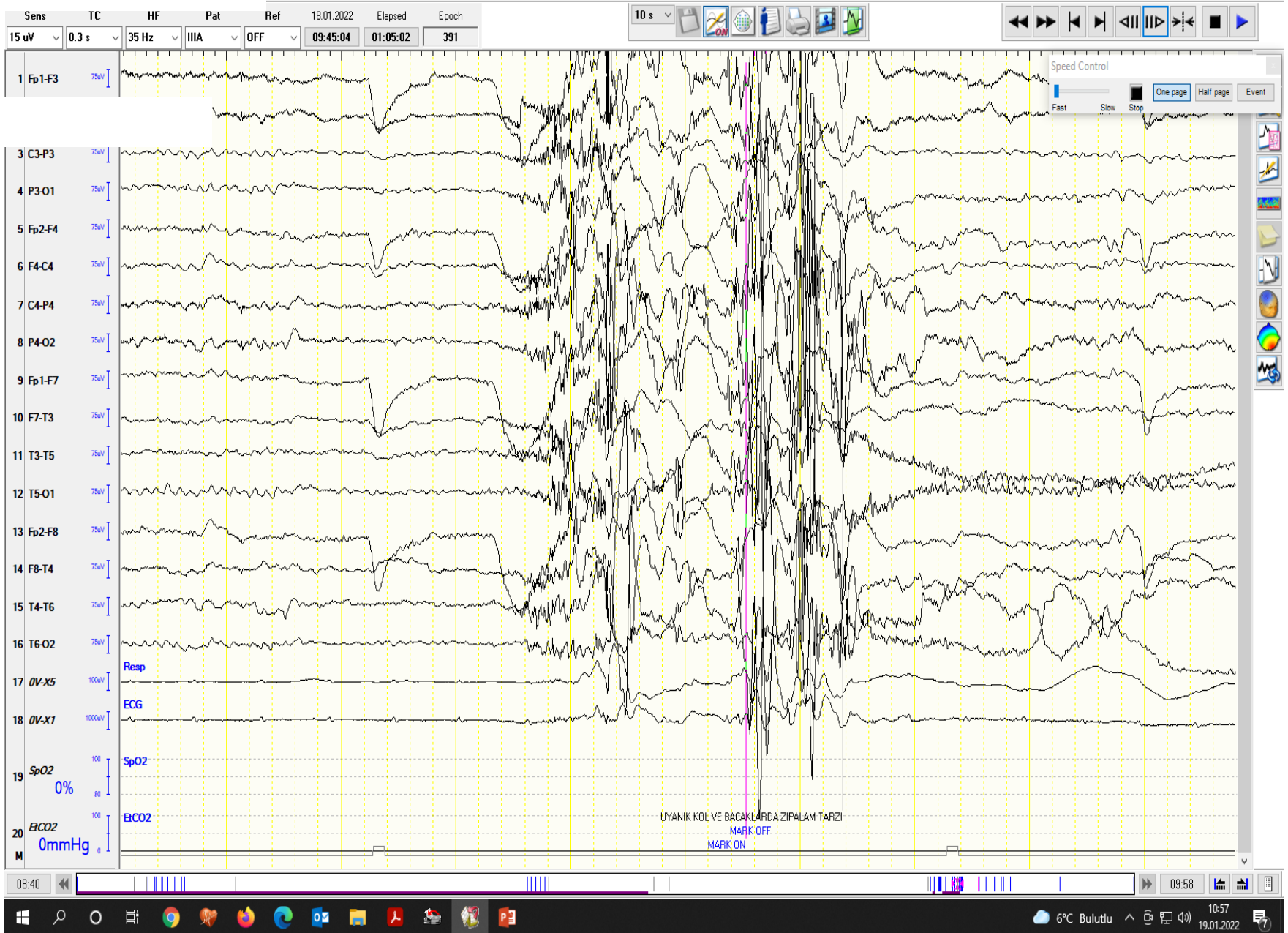


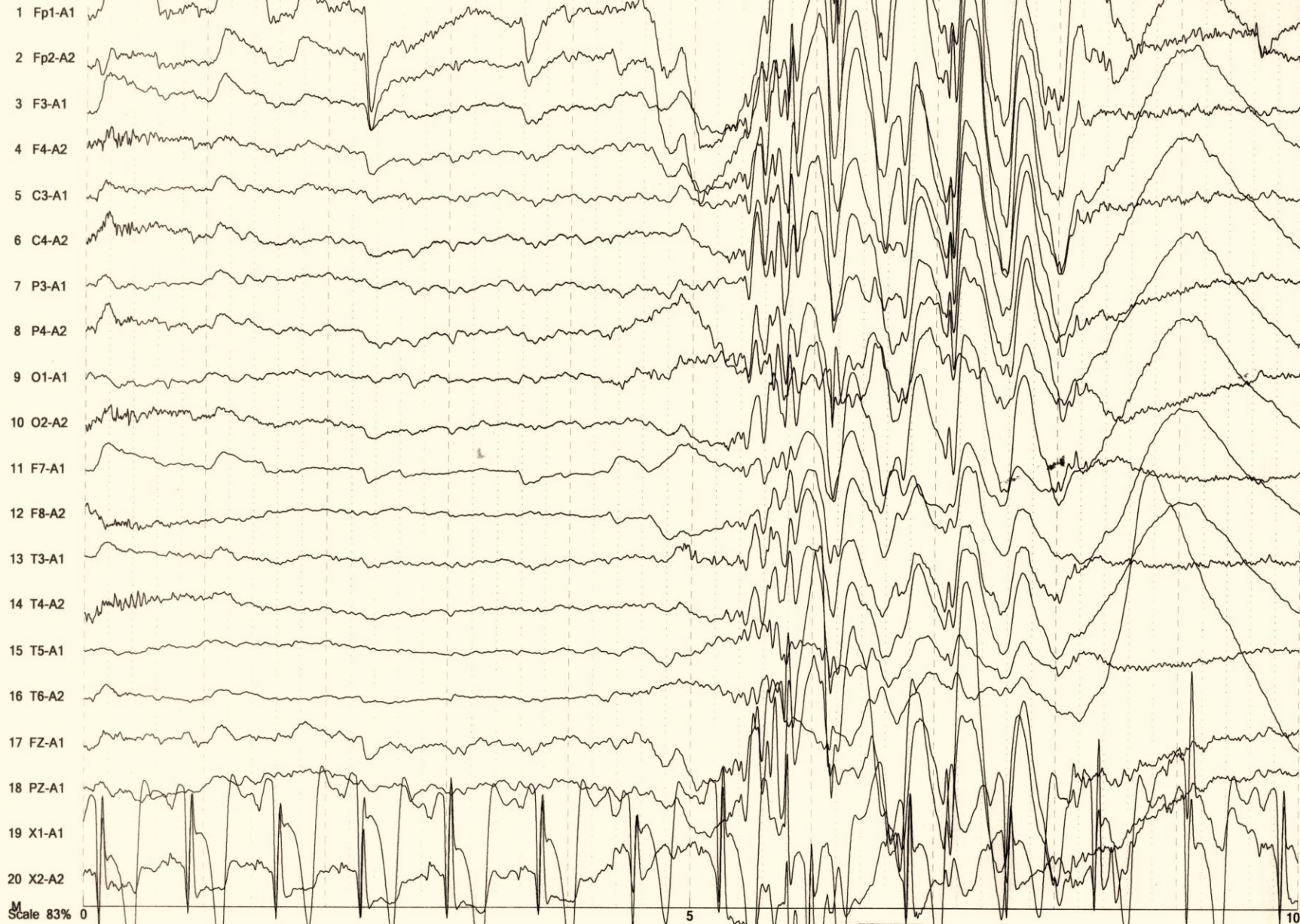
Göz kapama sonrası zemin aktivitesi



Gözler kapalı, fotik stimülasyon

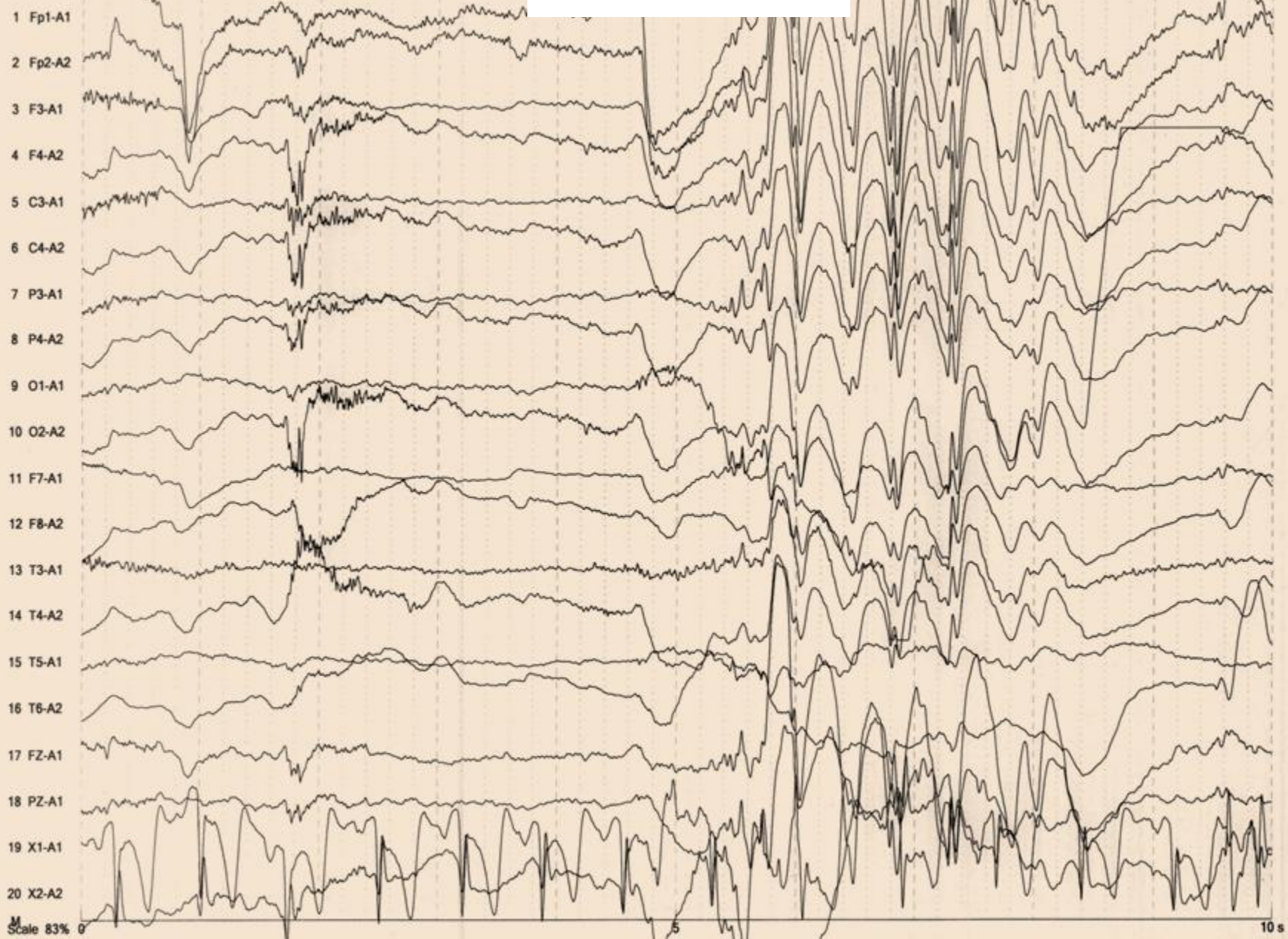




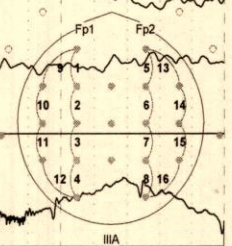
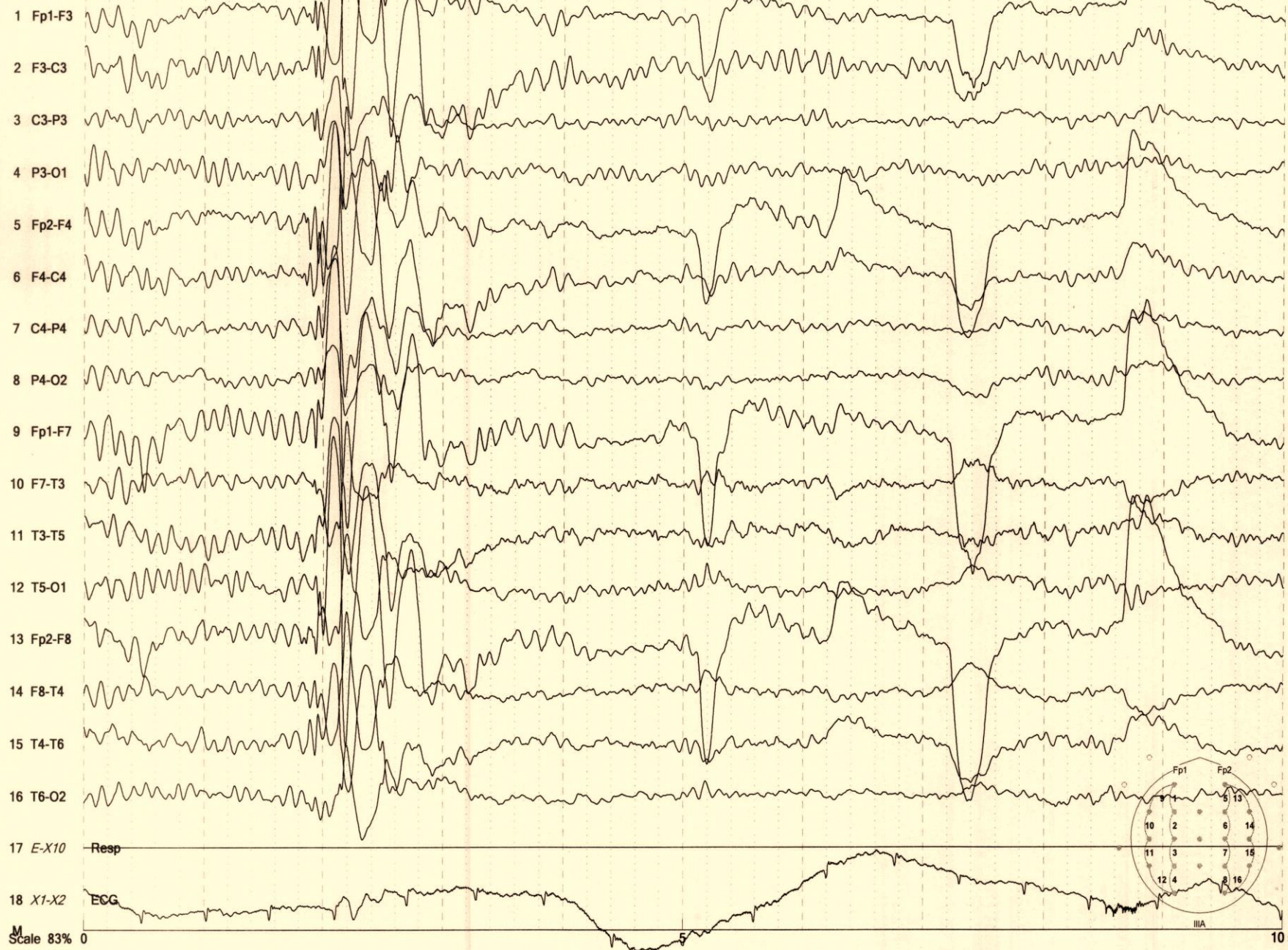


SENS 150uV x1
 06:32:31[0001:11:08] [SENS*15 HF*15 TC*0.3 CAL*50]
 Pgtt. FA ACFlt. *ON Refer. OFF Reset *OFF

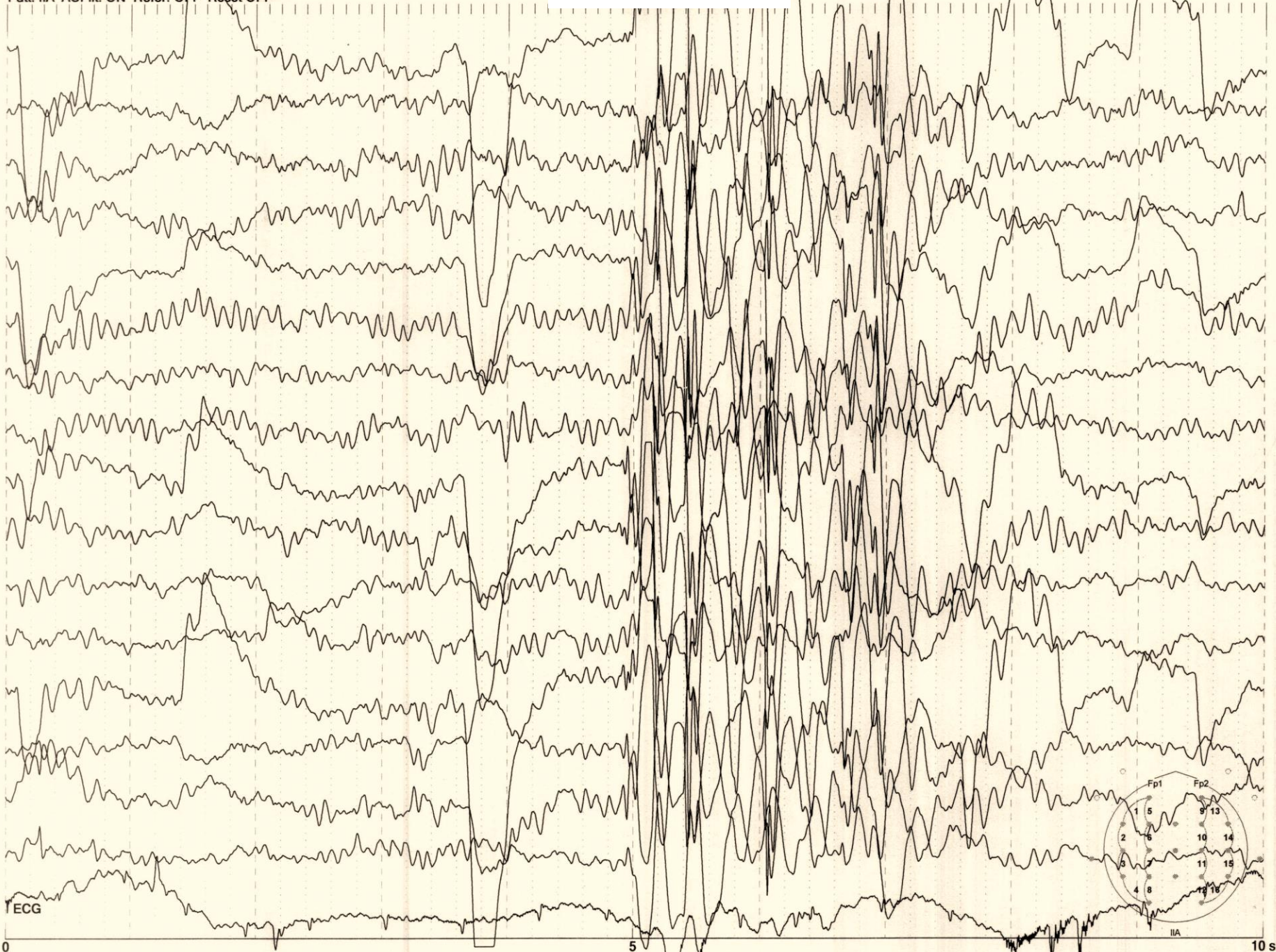
Date: 01.08.2008 ID: 541448
 Name: Site: GEMC17



SENS 100uV x1
09:15:16[0000:04:51] [SENS *10 HF *15 TC *0.3 CAL *50]
Patt. *IIA ACfilt. *ON Refer. *OFF Reset *OFF



09:11:08[0000:00:42] [SENS 7 HF 15 TC 0.3 CAL 50]
Patt. IIA ACfilt. ON Refer. OFF Reset OFF





Scale 84% 0

5

10

15s



SENS 18.12.23(0000.11.00) [SENS *10 HF *70 TC *91 CAL *50]
 100uV Par: 41A ACFlt: *ON Reflt: OFF Reslt: *OFF
 x1

1 Fp1-F3

2 F3-C3

3 C3-P3

4 F3-D1

5 Fp2-F4

6 F4-C4

7 C4-P4

8 F4-O2

9 Fp1-F7

10 F7-T3

11 T3-T5

12 T5-O1

13 Fp2-F8

14 F8-T4

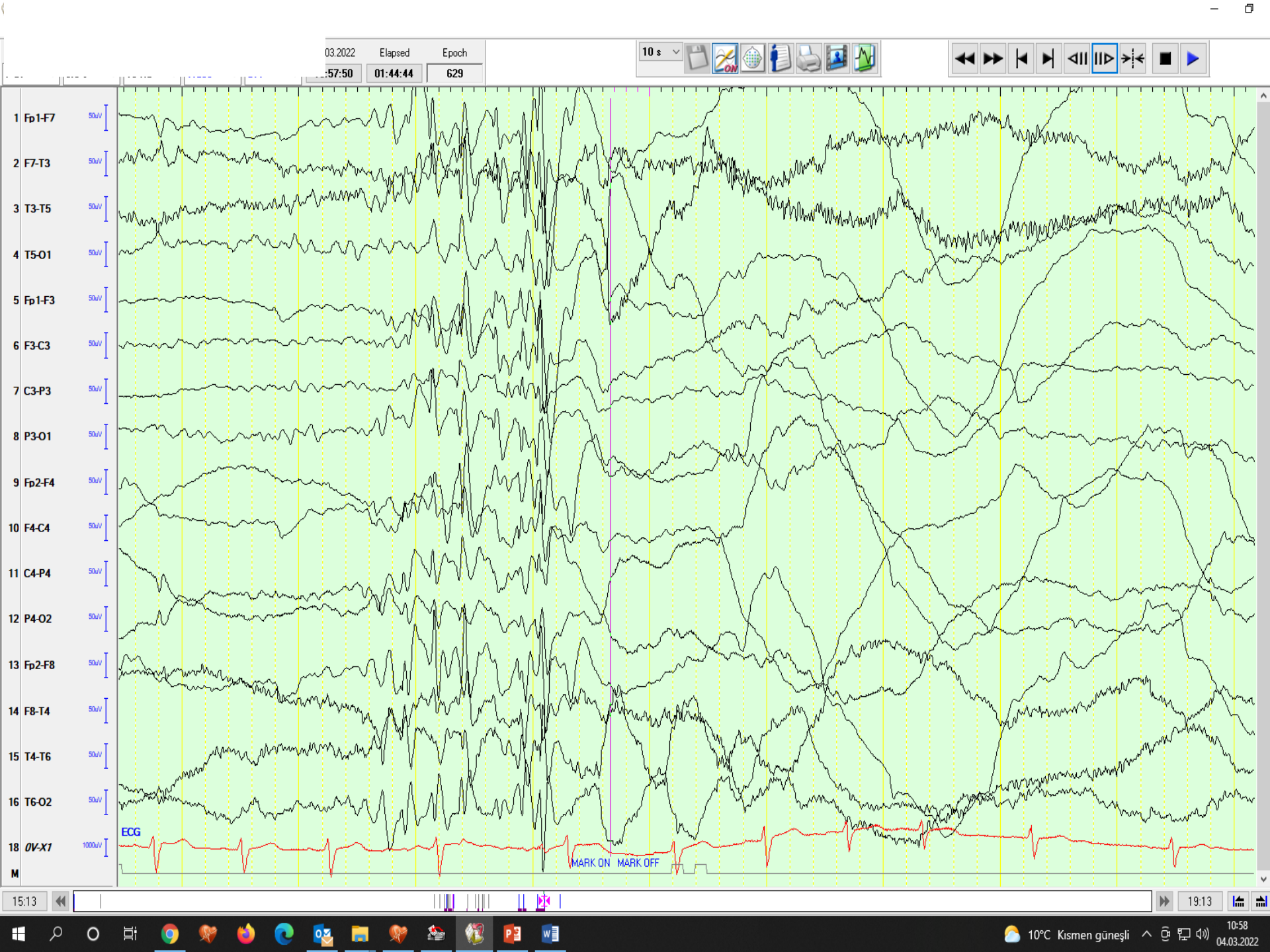
15 T4-T6

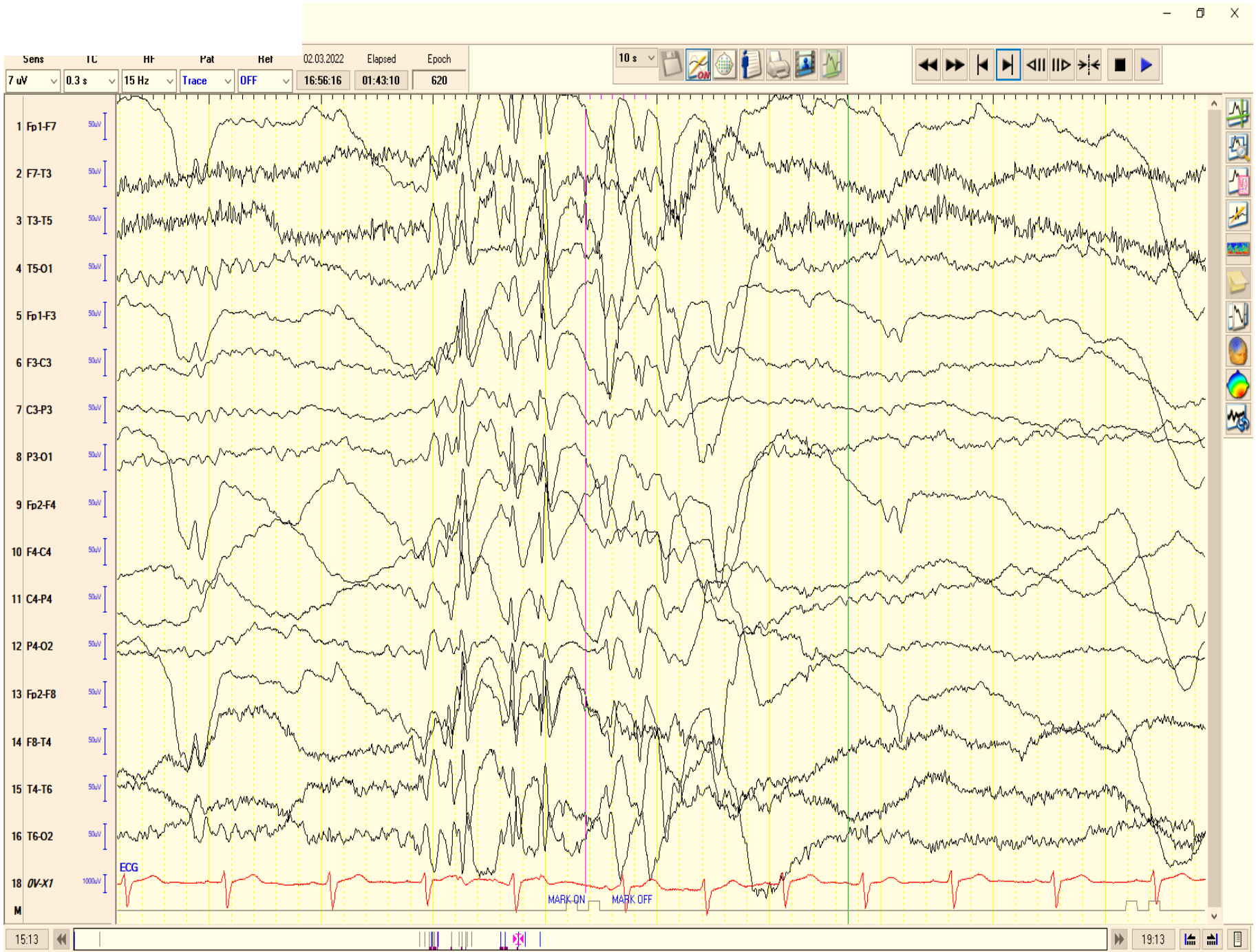
16 T6-O2

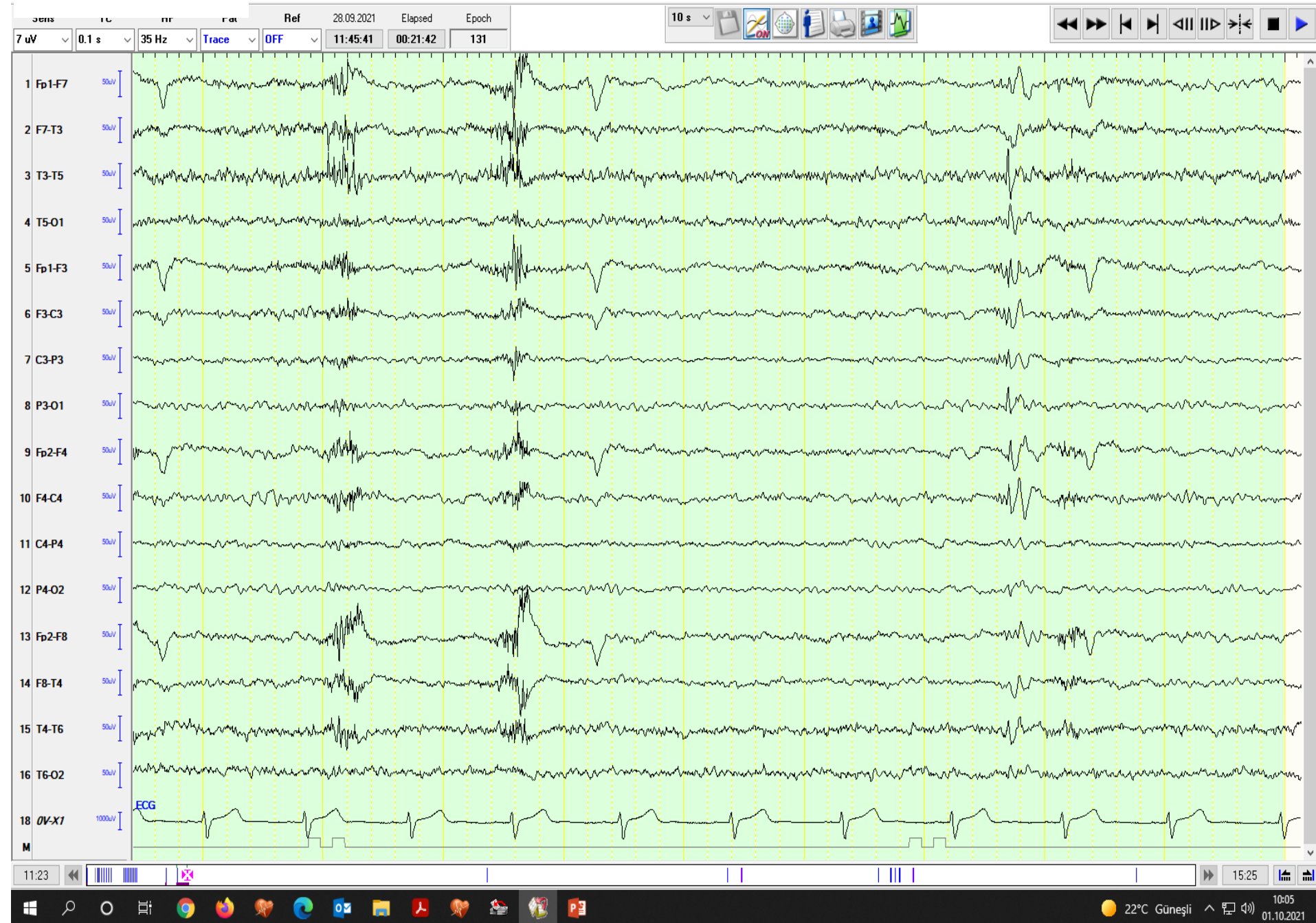
18 2x/1x ECG

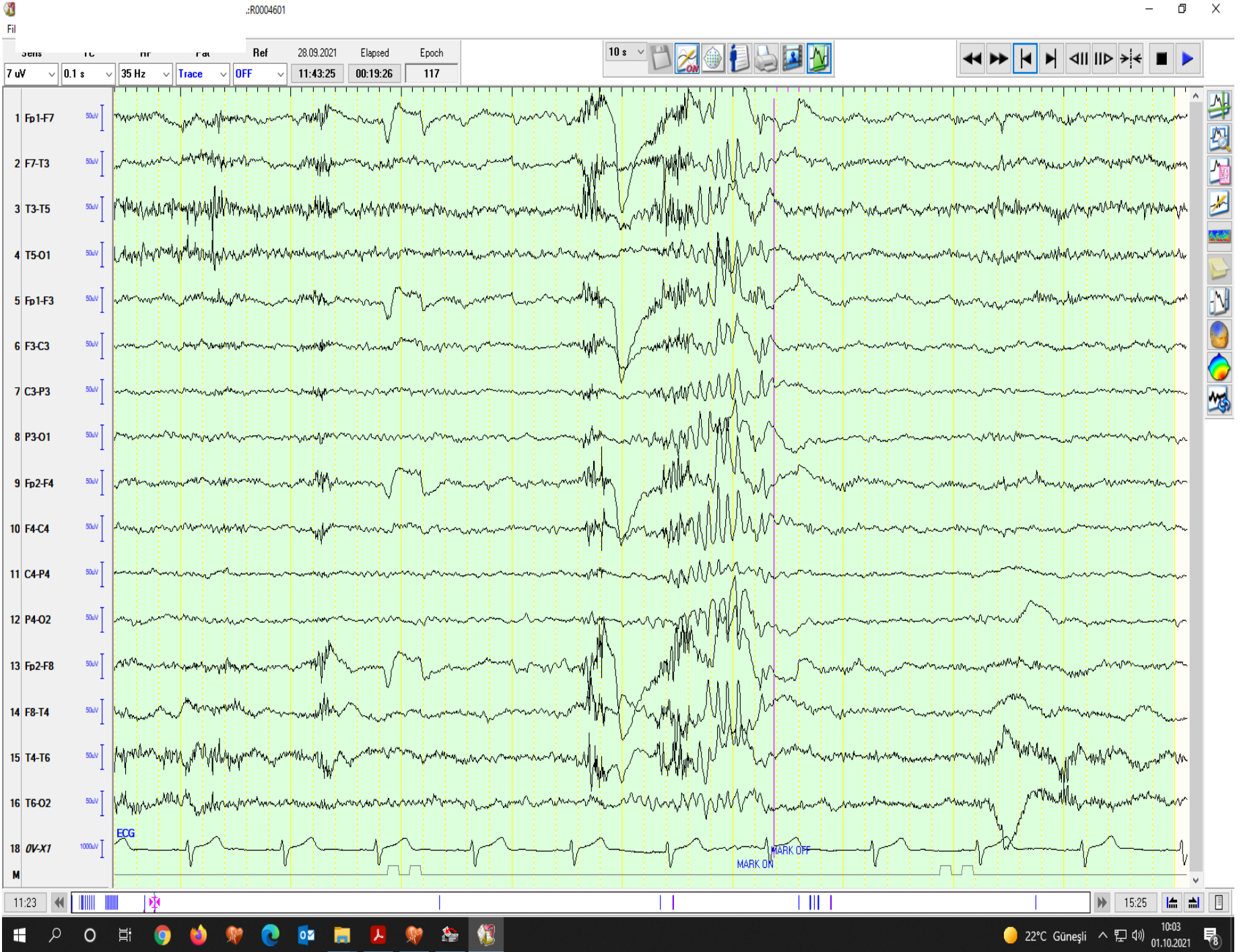
Score 83% 0











SENS
70uV
x1

13:28:37[0000:07:38]

[SENS 1 HF 15 TC 0.3 CAL 50]

Patt. IA AC Filt. ON Refer. OFF Reset OFF

C N

1 Fp1-A1

2 Fp2-A2

3 F3-A1

4 F4-A2

5 C3-A1

6 C4-A2

7 P3-A1

8 P4-A2

9 O1-A1

10 O2-A2

11 F7-A1

12 F8-A2

13 T3-A1

14 T4-A2

15 T5-A1

16 T6-A2

17 0V-X5

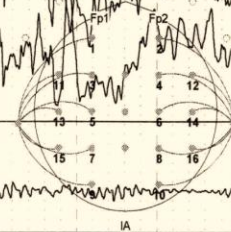
18 X1-X2

Resp

ECG

gozde

gozlerde kirkma



Ayırıcı Tanı; Progresif Miyoklonik Epilepsiler

- Lafora
- NCL
- Unverricht-Lundborg
- Sialidozis
- MERFF

SENS 18:50:33(0090:14:16) [SENS *7 HF *15 TC *0.1 CAL *50]
70uV Post: TA ACFBL *ON Refer: *OFF Reset *OFF

Page 1



SENS 18:48:48(0000:00:14) [SENS *10 HF *70 TC *0.3 CAL *50]
100uV Part 31A ACFB: *ON Refr: OFF Resol: *ON
x1

L 207

1 Fp1-F3

2 F3-C3

3 C3-P3

4 P3-O1

5 Fp2-F4

6 F4-C4

7 C4-P4

8 P4-O2

9 Fp1-F7

10 F7-T3

11 T3-T5

12 T5-O1

13 Fp2-F8

14 F8-T4

15 T4-T6

16 T6-O2

18 DIVX7

ECG

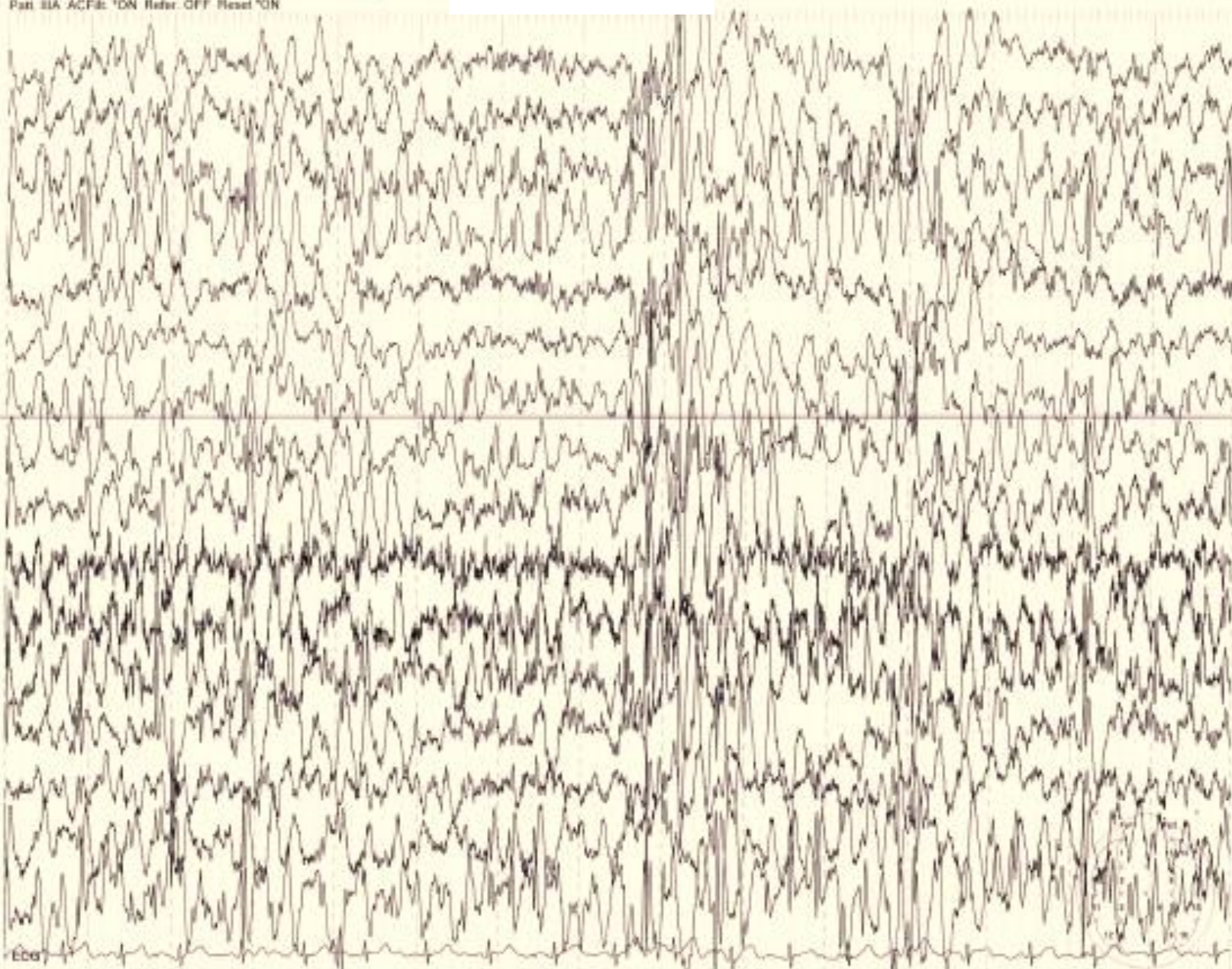
Gain 84% 0

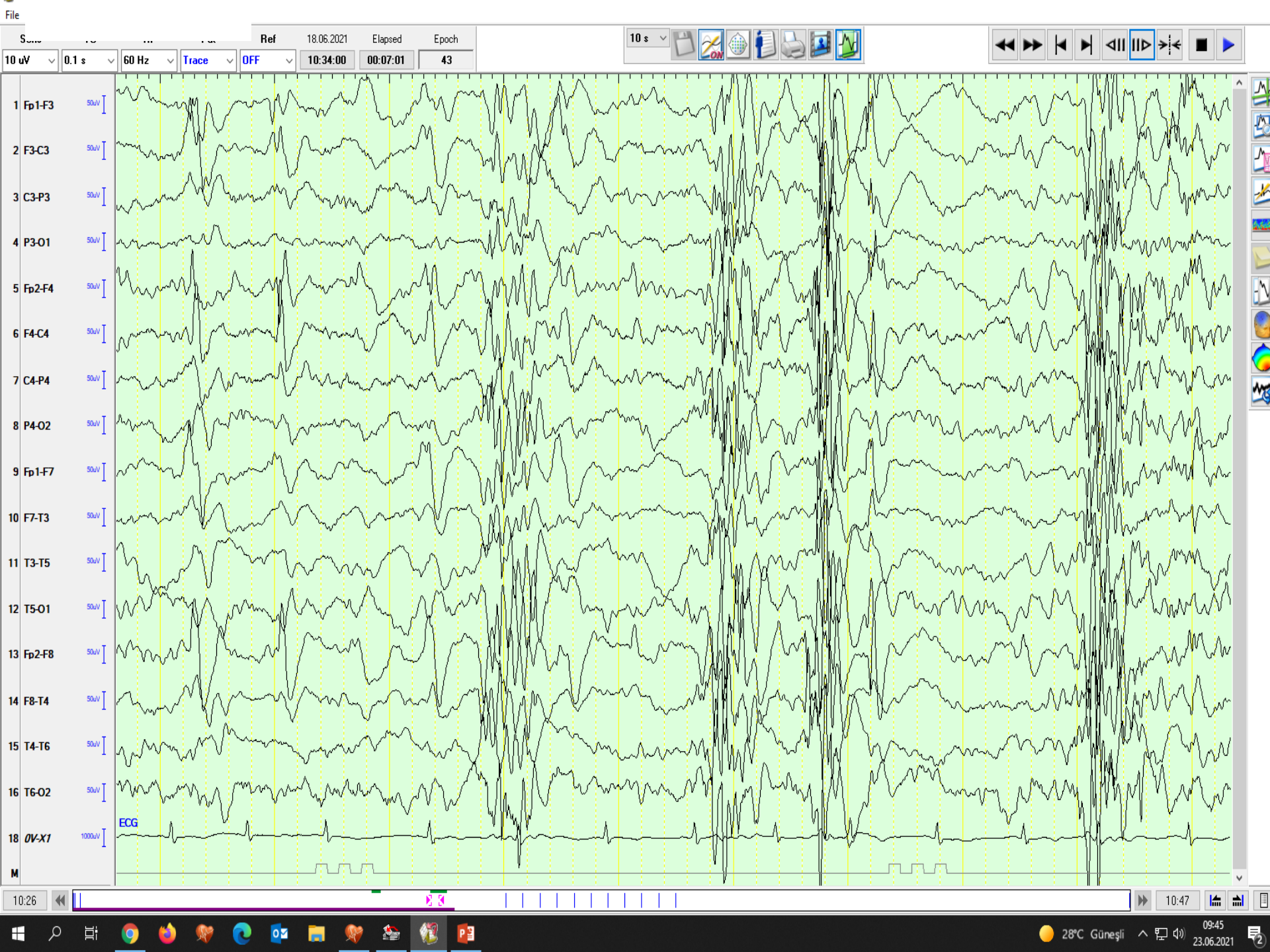
5

10

15

15 s

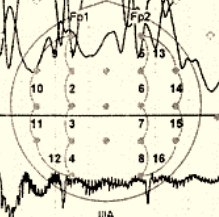
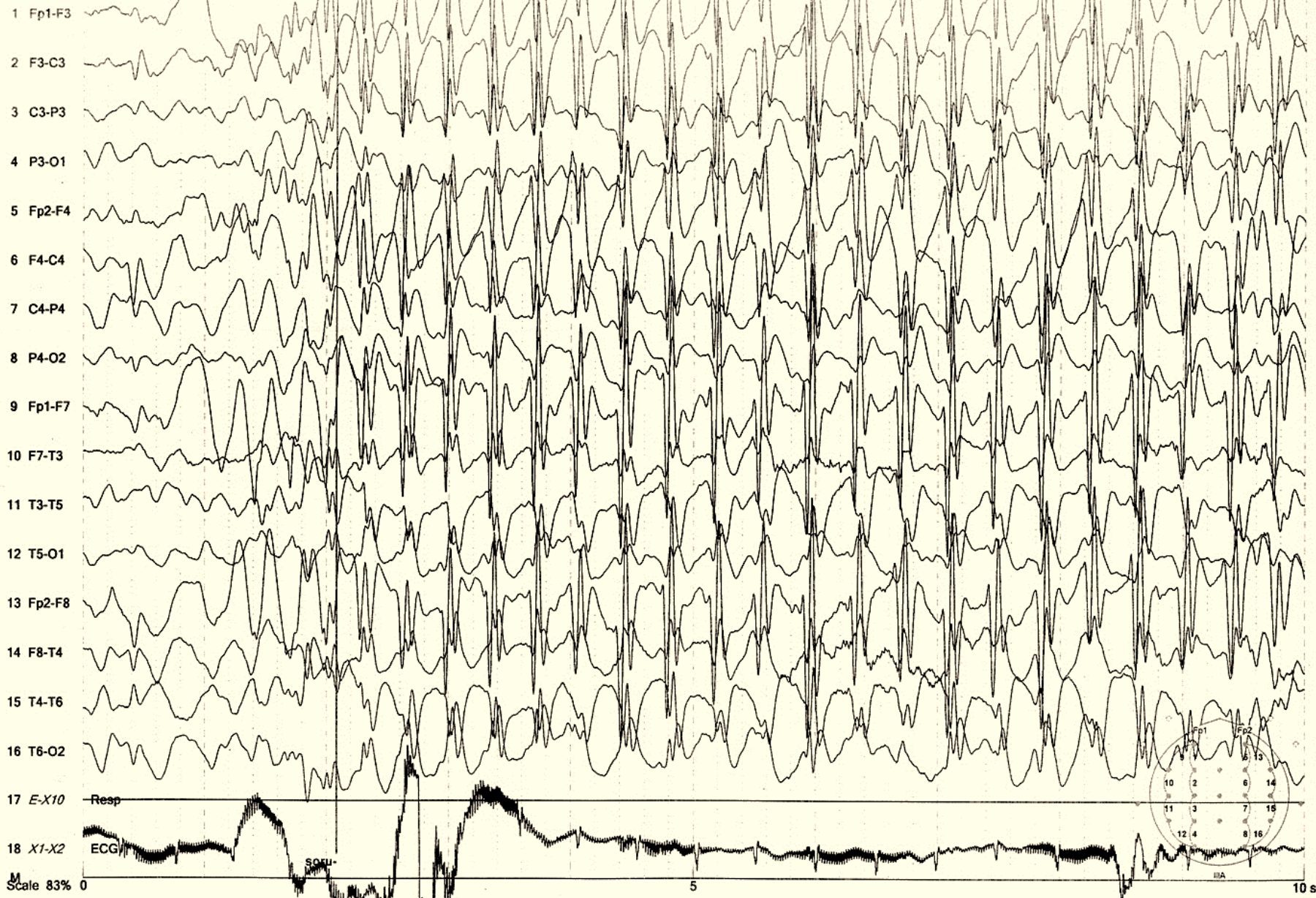




Absans Epilepside EEG

- Normal zemin aktivitesi
- 3-4 Hz Diken dalga kompleksleri
- 4-20 sn İktal
- Posterior zemin aktivitesinde delta ritmi (OIRDA)
- Non-REM uykusunda epileptik aktivite düzensizleşmekte
- Kısa jeneralize diken dalga aktivitesi
- Fokal EEG anomalileri, santro-temporal keskin dalga
- Fotosensitivite % 20

SENS 13:41:01[0000:06:54] [SENS *15 HF *15 TC *0.3 CAL *50]
150uV Palt. *IIIA ACFil. *ON Refer. *OFF Reset *OFF
x1



SENS 13:34:27[0000:00:20] [SENS 7 HF 15 TC 0.3 CAL 50]
70uV
x1
Patt. IIA ACfilt. ON Refer. OFF Reset OFF

Name Sila BOLAT

J8

1 Fp1-F7

2 F7-T3

3 T3-T5

4 T5-O1

5 Fp1-F3

6 F3-C3

7 C3-P3

8 P3-O1

9 Fp2-F4

10 F4-C4

11 C4-P4

12 P4-O2

13 Fp2-F8

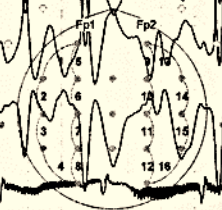
14 F8-T4

15 T4-T6

16 T6-O2

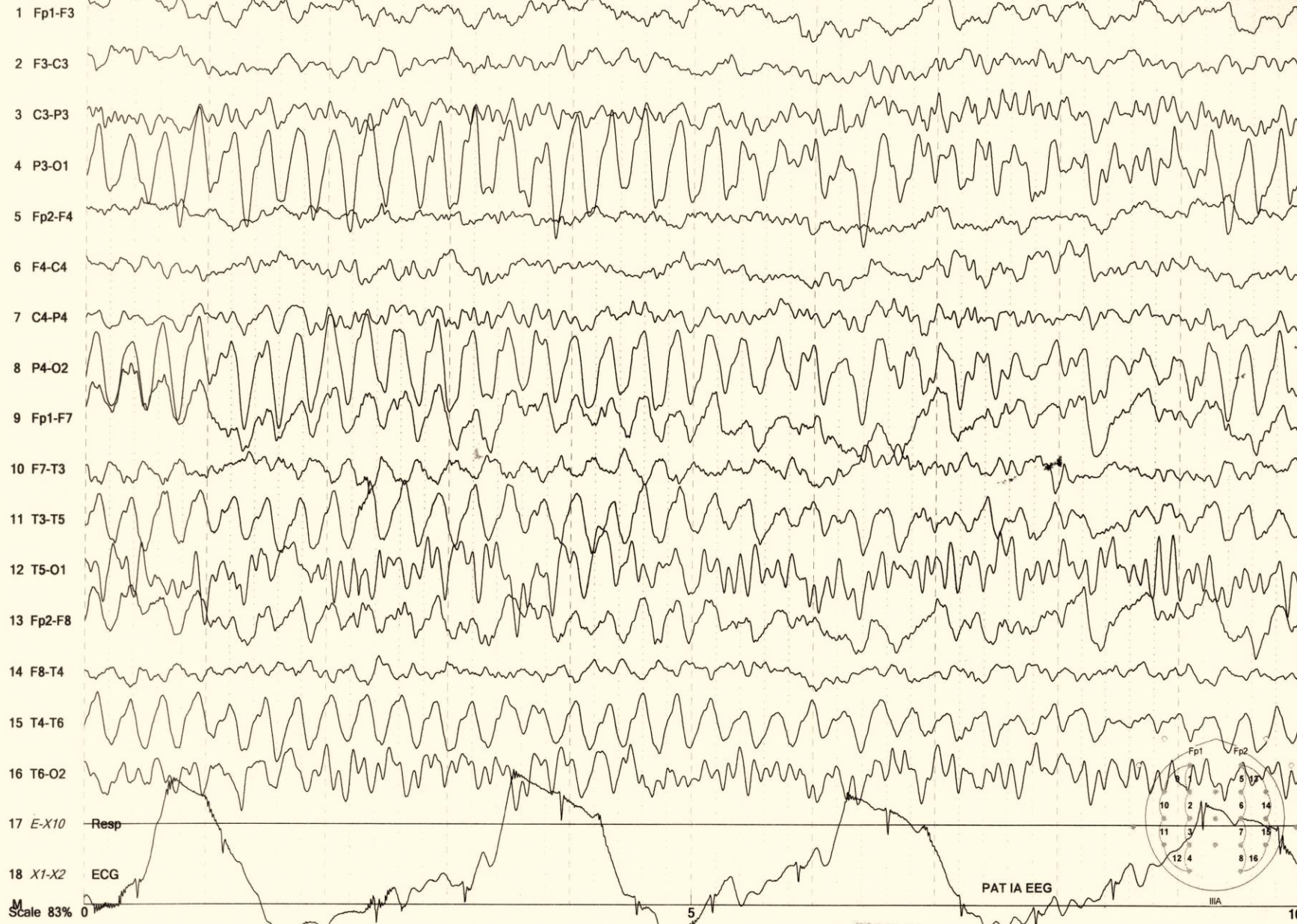
18 X1-X2

Scale 83% 0



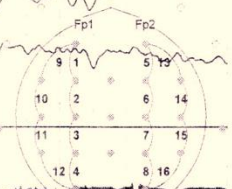
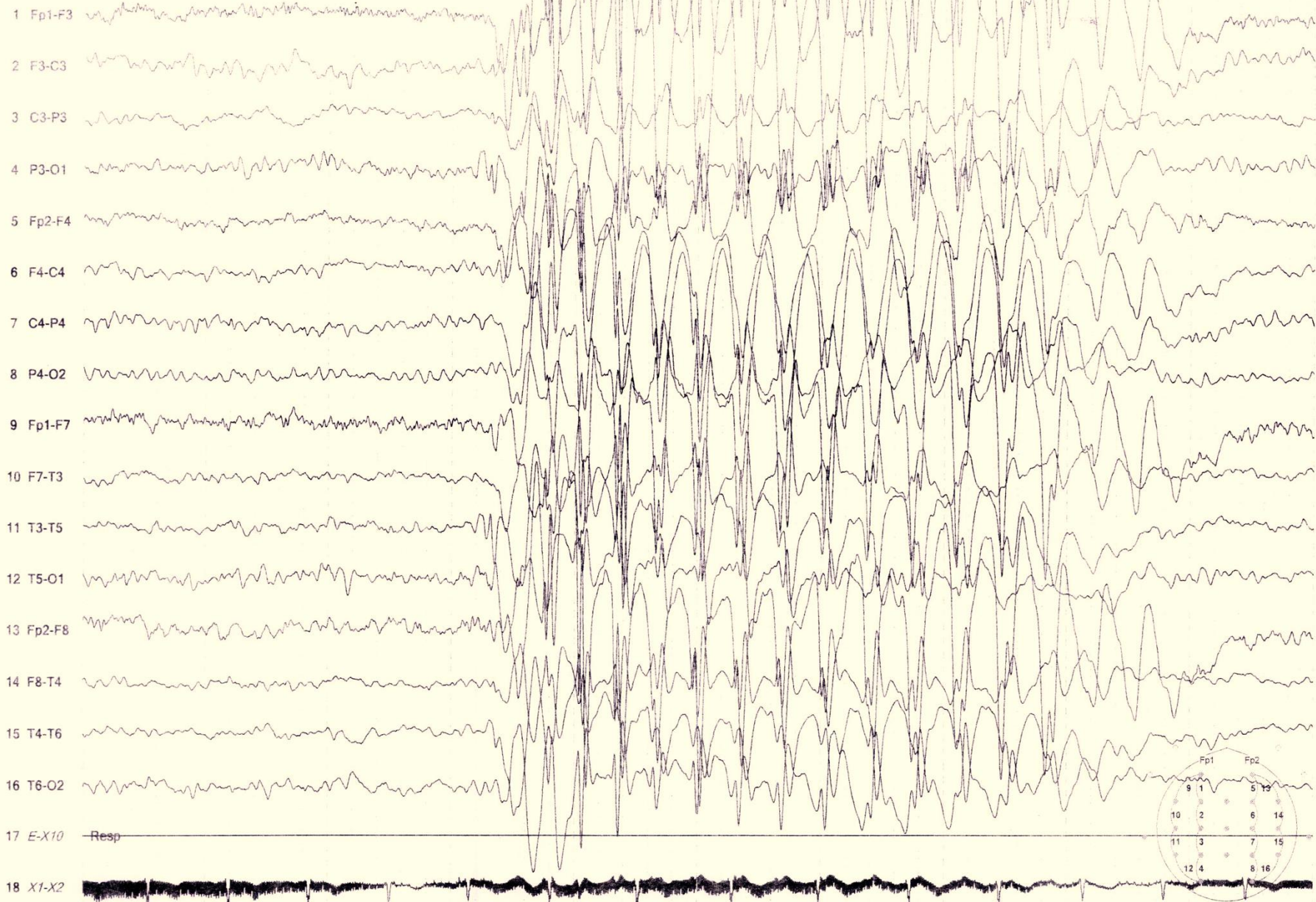
SENS 15:18:23[0000:00:16] [SENS *7 HF *15 TC *0.3 CAL *50]
70uV
x1
Patt. *IIIA ACFilt. *ON Refer. *OFF Reset *OFF

39



SENS 13:51:19[0000:12:36] [SENS *7 HF *15 TC *0.3 CAL *50]
70uV Patt. *IIIA ACfilt. *ON Refer. *OFF Reset *OFF
x1

857775



Çocukluk Çağı Absansı

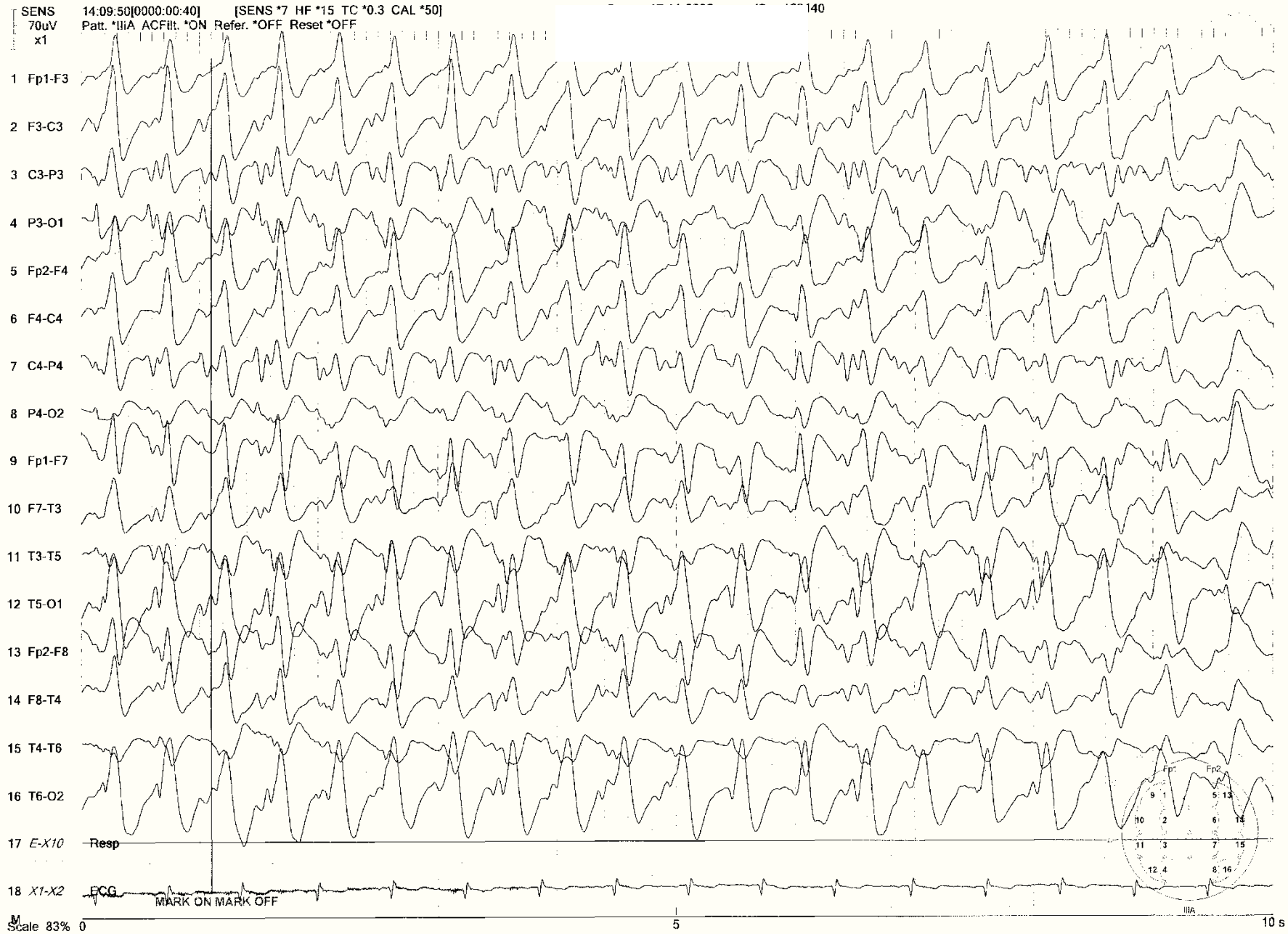
Juvenil Absans

EEG Background	OIRDA in 21%	Normal
Epileptiform discharge		
-Awake	2.5-4 Hz generalized spike-wave	3-5.5 Hz generalized spike-wave
-Asleep	Polyspike and wave may be seen in drowsiness and sleep only	Polyspike and wave may be seen in drowsiness and sleep only
-Irregular generalized spike-wave	Uncommon	More common than CAE Discharges are more frequent than in CAE
Photoparoxysmal response	Rare IPS triggers generalized spike-wave in 15% but does not induce seizures	Rare IPS triggers generalized spike-wave in 25% but does not induce seizures
Hyperventilation induction	87%	87%

Absans Alt Grupları;

- **Tipik Absans**
- **Atipik Absans**
- **Miyoklonik Absans**
- **Göz kapağı myoklonisi ve Absans**

Atipik absans, yavaş diken dalga kompleksleri



Lennox-Gastaut Sendromu

- Jeneralize hızlı aktivite (10-20 Hz)
- Yaygın yavaş diken dalga aktivitesi
- Burst-supresyon paterni
- Elektrodecrementik burstler
- Non-REM uykusunda belirginleşme

Yavaş diken;



SENS 14:11:40(3000.00:34) [SENS 7-HF 70-TC 0.3 0A1/50]
70uV PatB. IIA ACFIL ON Reflex OFF Reset OFF
x1

516410

Page 1

Page 1

1 Fp1-F7

2 F7-T3

3 T3-T5

4 T5-O1

5 Fp1-F3

6 F3-C3

7 C3-P3

8 P3-O1

9 Fp2-F4

10 F4-C4

11 C4-P4

12 P4-O2

13 Fp2-F8

14 F8-T4

15 T4-T6

16 T6-O2

18 0V-X1

ECG



Scale 34% 0

Scale 34% 0

Scale 34% 0

Scale 34% 0

SENS 7 08:50:40(0000:10:16) [SENS *7 10F *70 TC *0.1 CAL *50]
70uV
x1
Patt. IIA ACFIL *ON Refer. OFF Reset *ON

Page

Page

1

1 Fp1-F7

2 F7-T3

3 T3-T5

4 T5-O1

5 Fp1-F3

6 F3-C3

7 C3-P3

8 P3-O1

9 Fp2-F4

10 F4-C4

11 C4-P4

12 P4-O2

13 Fp2-F8

14 F8-T4

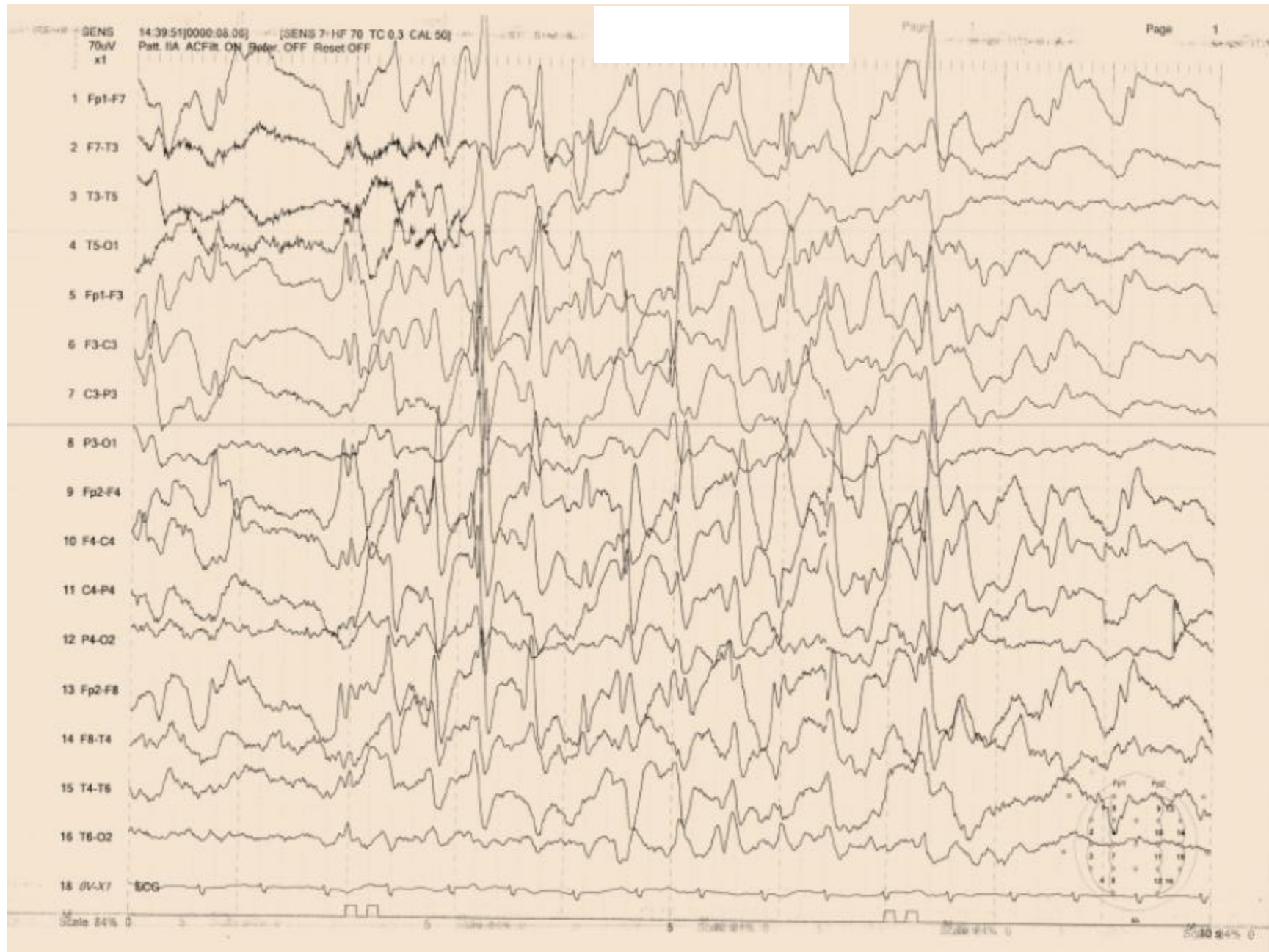
15 T4-T6

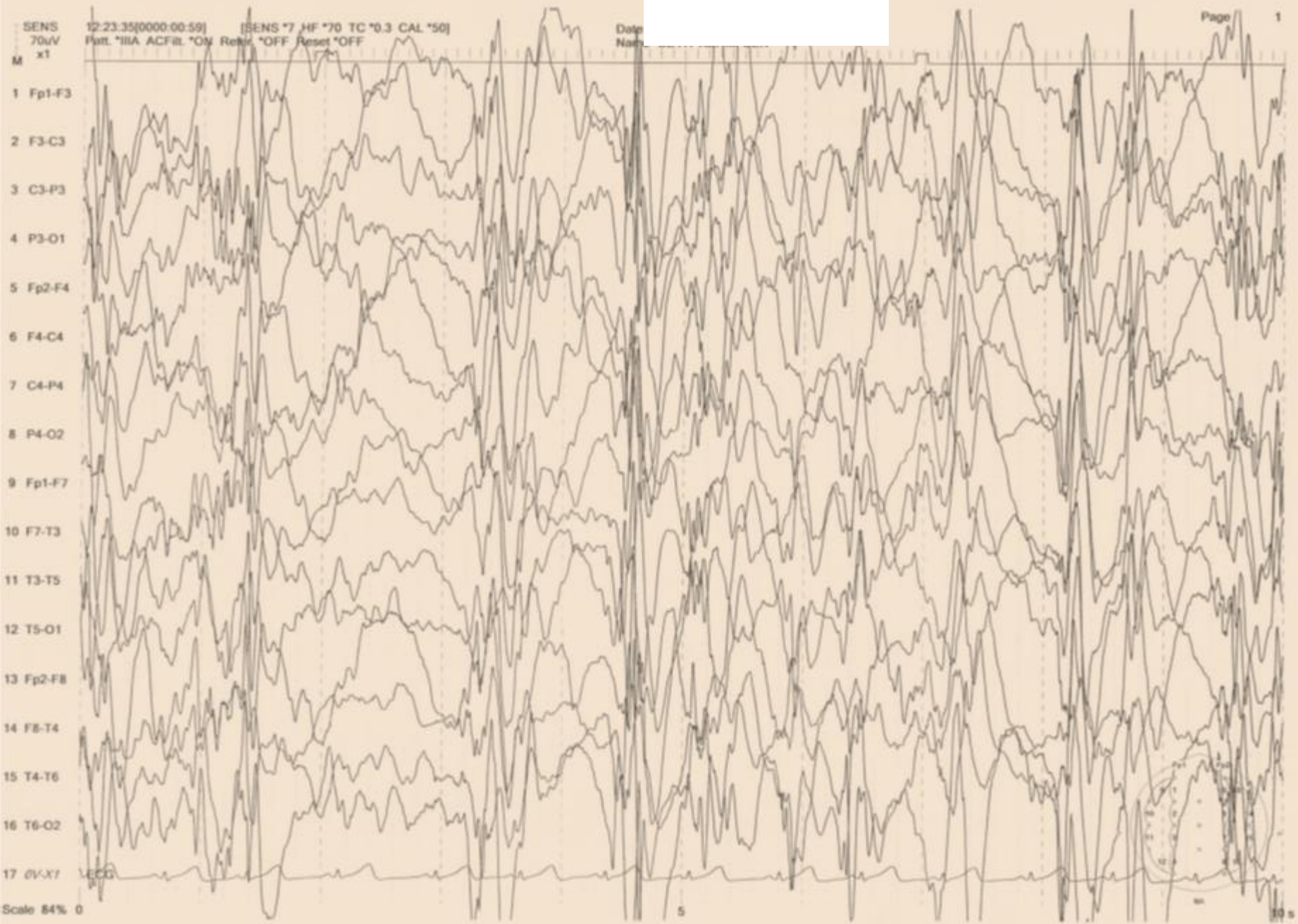
16 T6-O2

18 DIV-X1

QINSTRMA







1 Fp1-F3

2 F3-C3

3 C3-P3

4 P3-O1

5 Fp2-F4

6 F4-C4

7 C4-P4

8 P4-O2

9 Fp1-F7

10 F7-T3

11 T3-T5

12 T5-O1

13 Fp2-F8

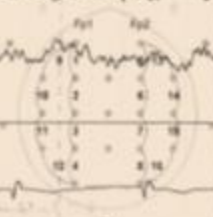
14 F8-T4

15 T4-T8

16 T8-O2

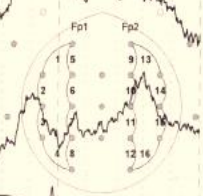
17 E-X10 -Resp

18 X1-X2 -EOG



18 OV-X1

GOZLERI YUKARI BAKMA





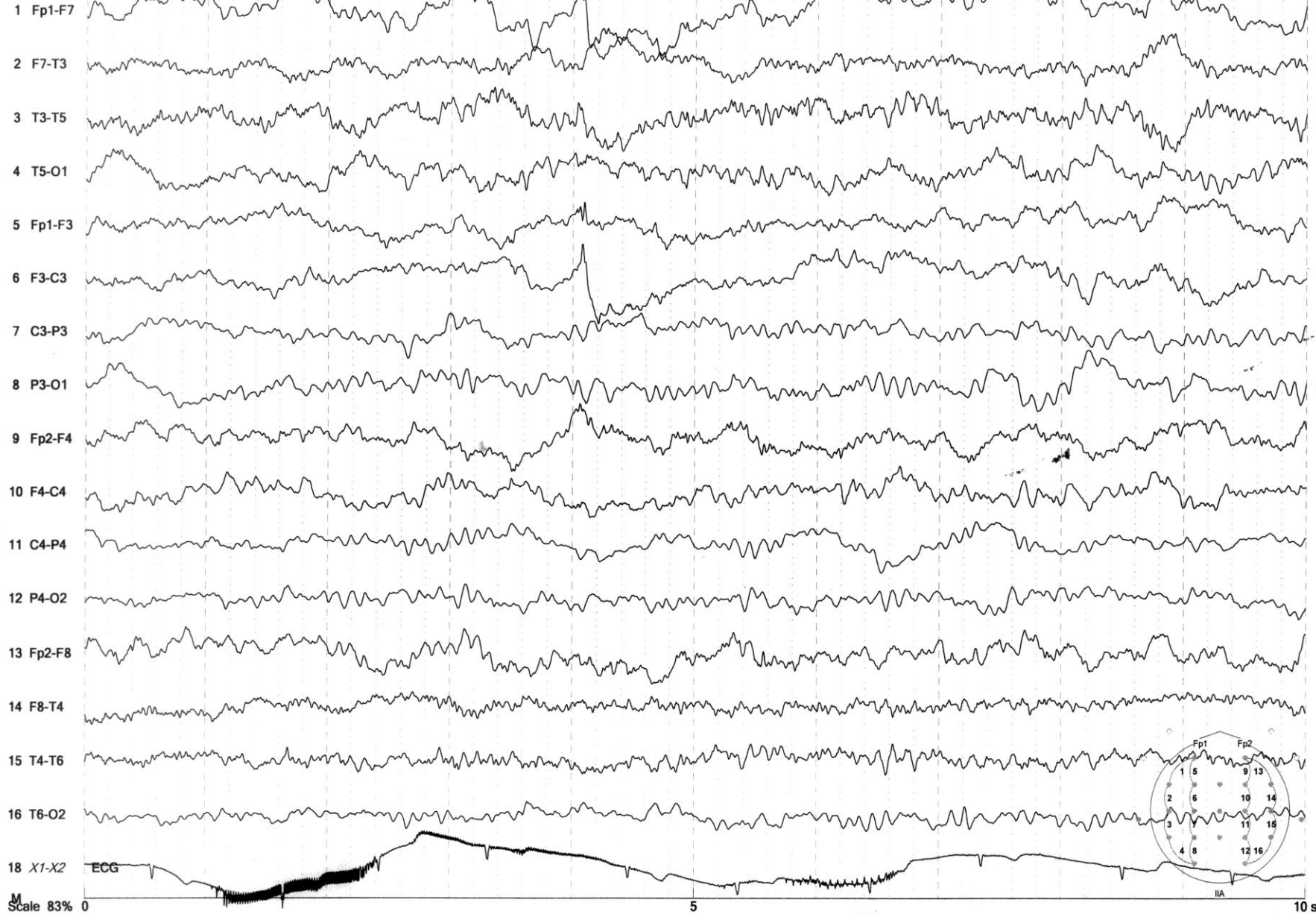
Sonuç;



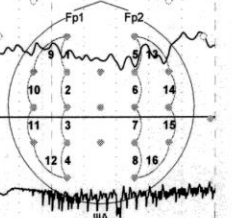
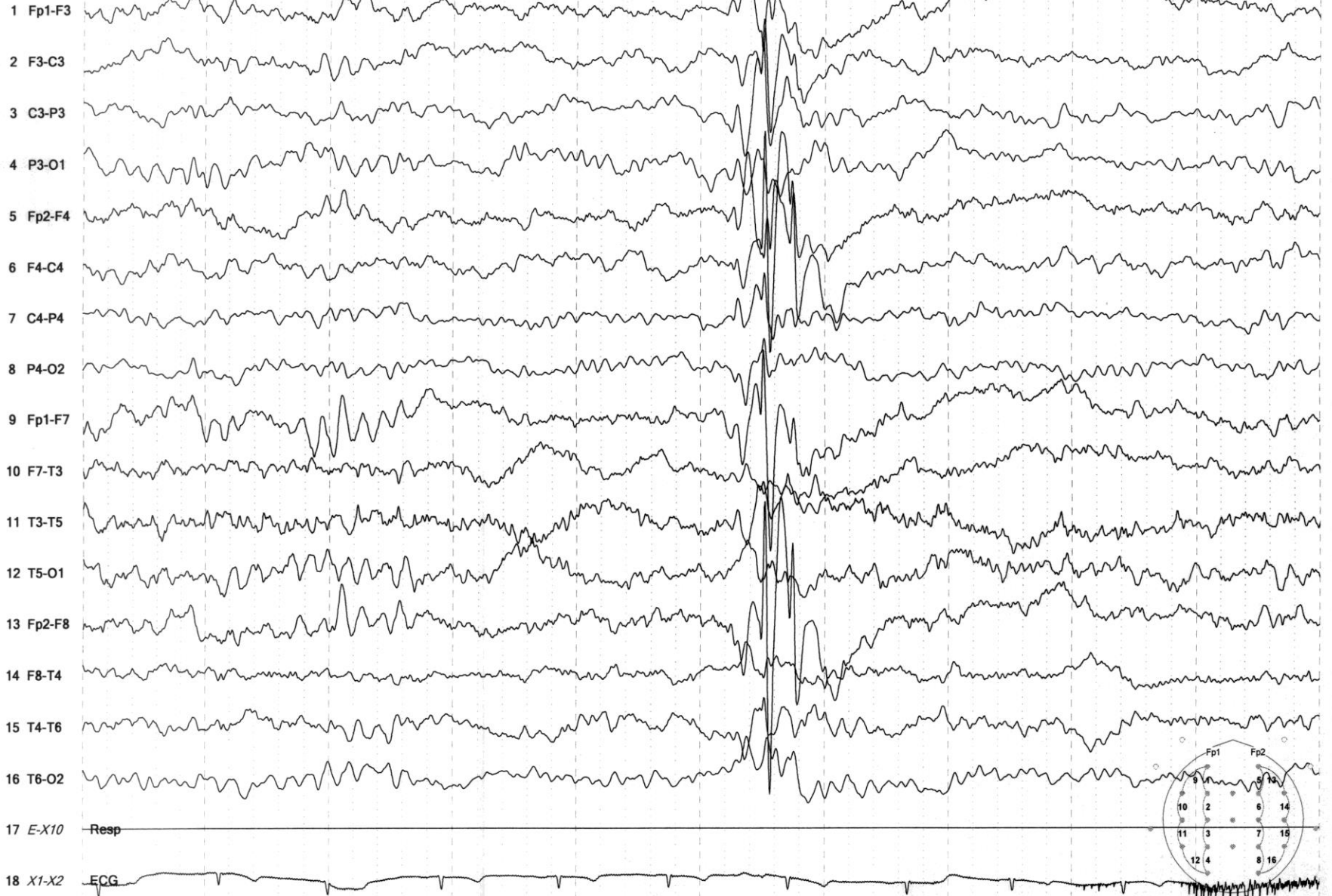
- Epilepsi tanısında yardımcıdır.
- Sendromik sınıflamayı kolaylaştırır.
- Tetikleyicilerin saptanmasını sağlar.
- Uygun antiepileptik tedavisi için yol gösterir.
- Prognozu belirlemede yardımcıdır.

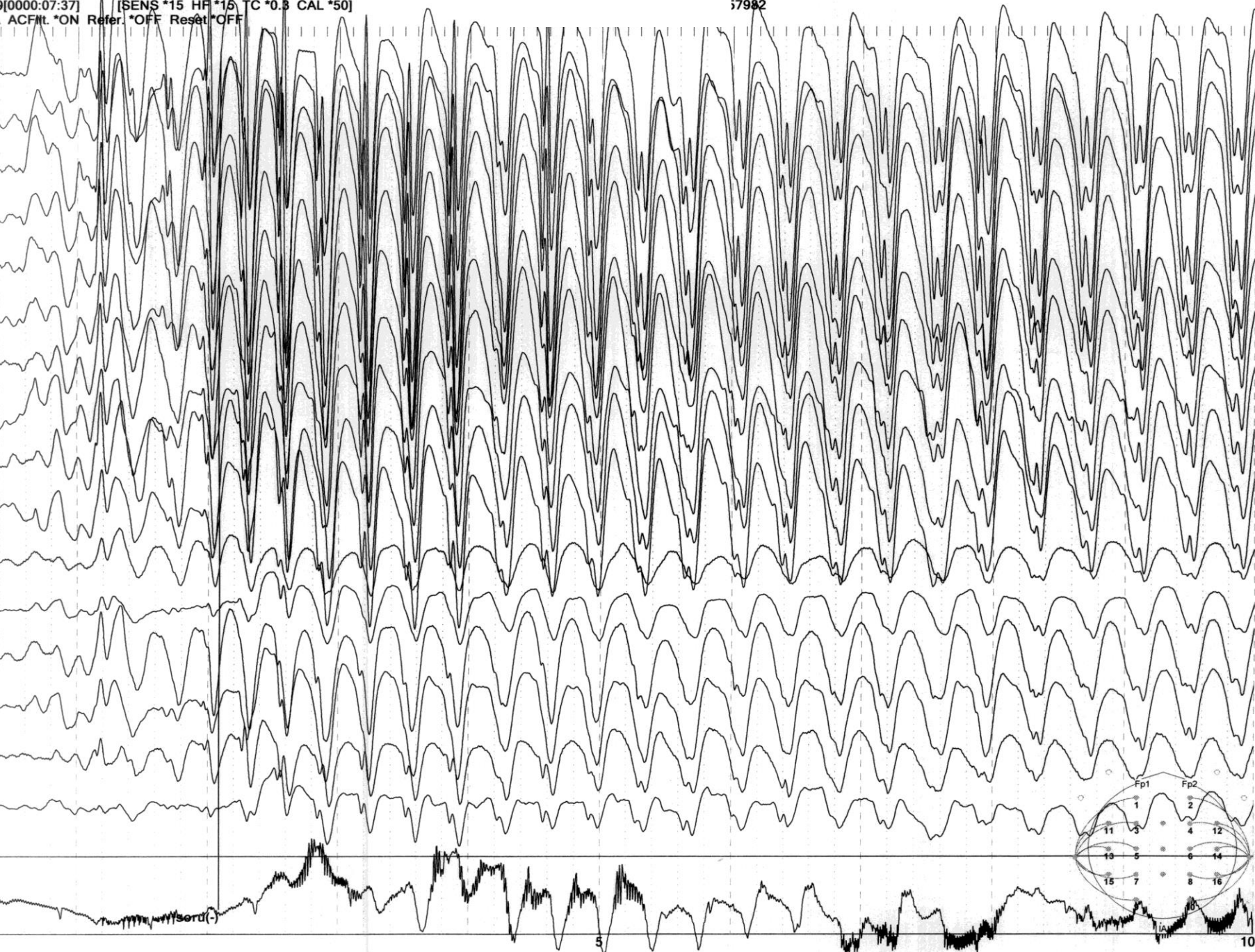


SENS 15:24:05[0000:00:13] [SENS 7 HF 15 TC 0.3 CAL 50]
 70uV Patt. IIA ACfilt. ON Refer. OFF Reset OFF
 x1



SENS 15:26:48[0000:02:56] [SENS *7 HF *15 TC *0.3 CAL *50]
 70uV
 x1
 Patt. *IIIA ACfilt. *ON Refer. *OFF Reset *OFF









SENS 70uV x1
18:02:47(0000.23.20) [SENS *7 HF *35 TC *0.1 CAL *50]
Pul: 1A ACF8L *ON Refer *OFF Reset *OFF

Page 03

Page 1



SENS 15:31:10(0000:24:57) [SENS *10 HF *35 TC *0.1 CAL *50]
100uV Pot: IIA ACFIL *ON Refer. OFF Reset *OFF
x1

C
N

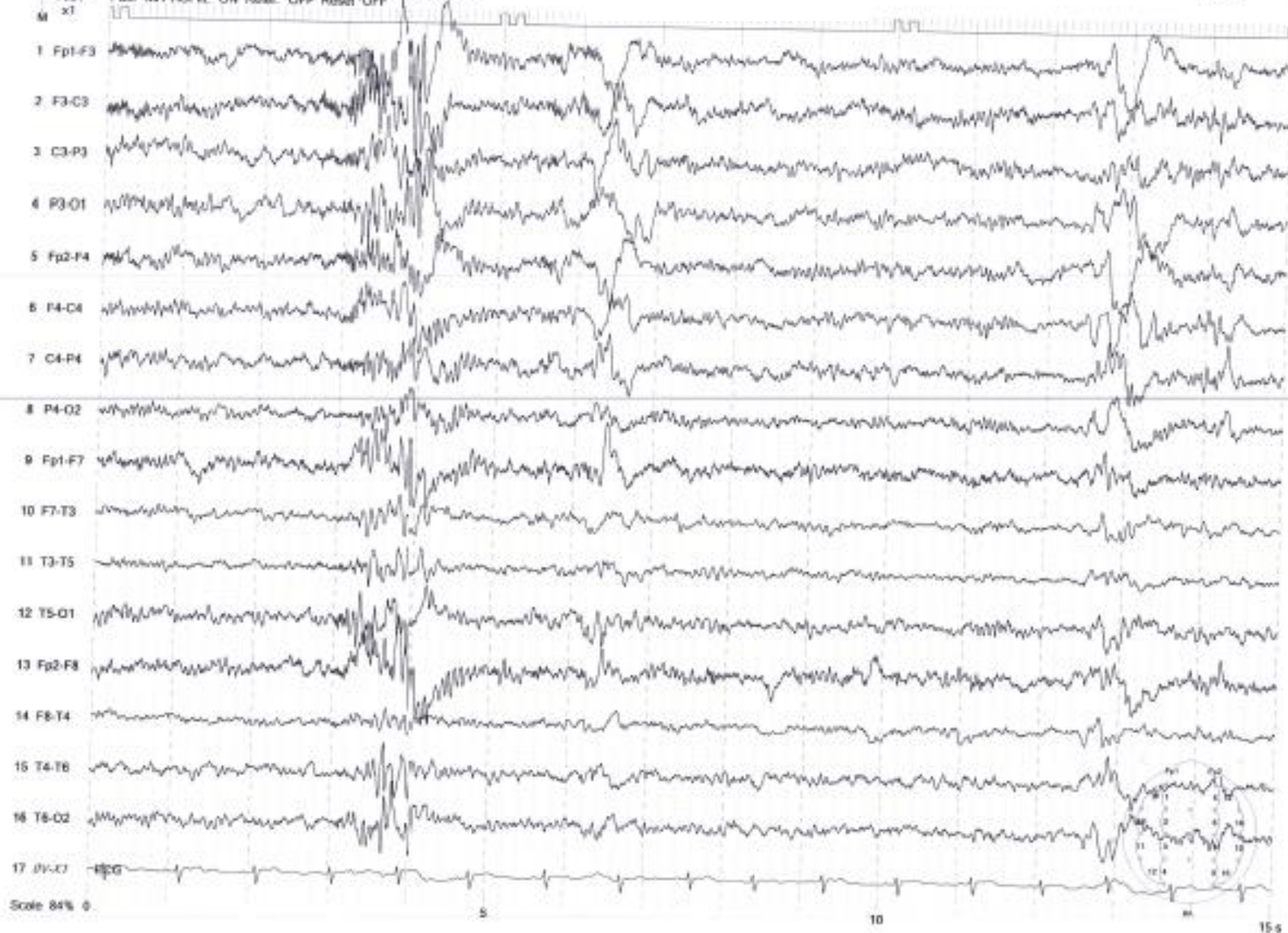


Scale 83% 0

10 s

SENS 09:16:43(0005:17:52) [SENS *7 HF *76 TC *0.1 CAL *50]
70uV Pul. 100A AC Fil. *ON Rele. *OFF Reset *OFF
x1

Page 1



SENS 10:62.58(0000:39:12) (SENS *10 HF *15 TC *0.3 CAL *90)
100uV Ref: *18A ACFIL *ON Refr: *OFF Resol: *OFF

M x1

1 Fp1-F3

2 F3-C3

3 C3-P3

4 P3-O1

5 Fp2-F4

6 F4-C4

7 C4-P4

8 P4-O2

9 Fp1-F7

10 F7-T3

11 T3-T5

12 T5-O1

13 Fp2-F8

14 F8-T4

15 T4-T6

16 T6-O2

17 DVX1 EOG

Scale 84% 0

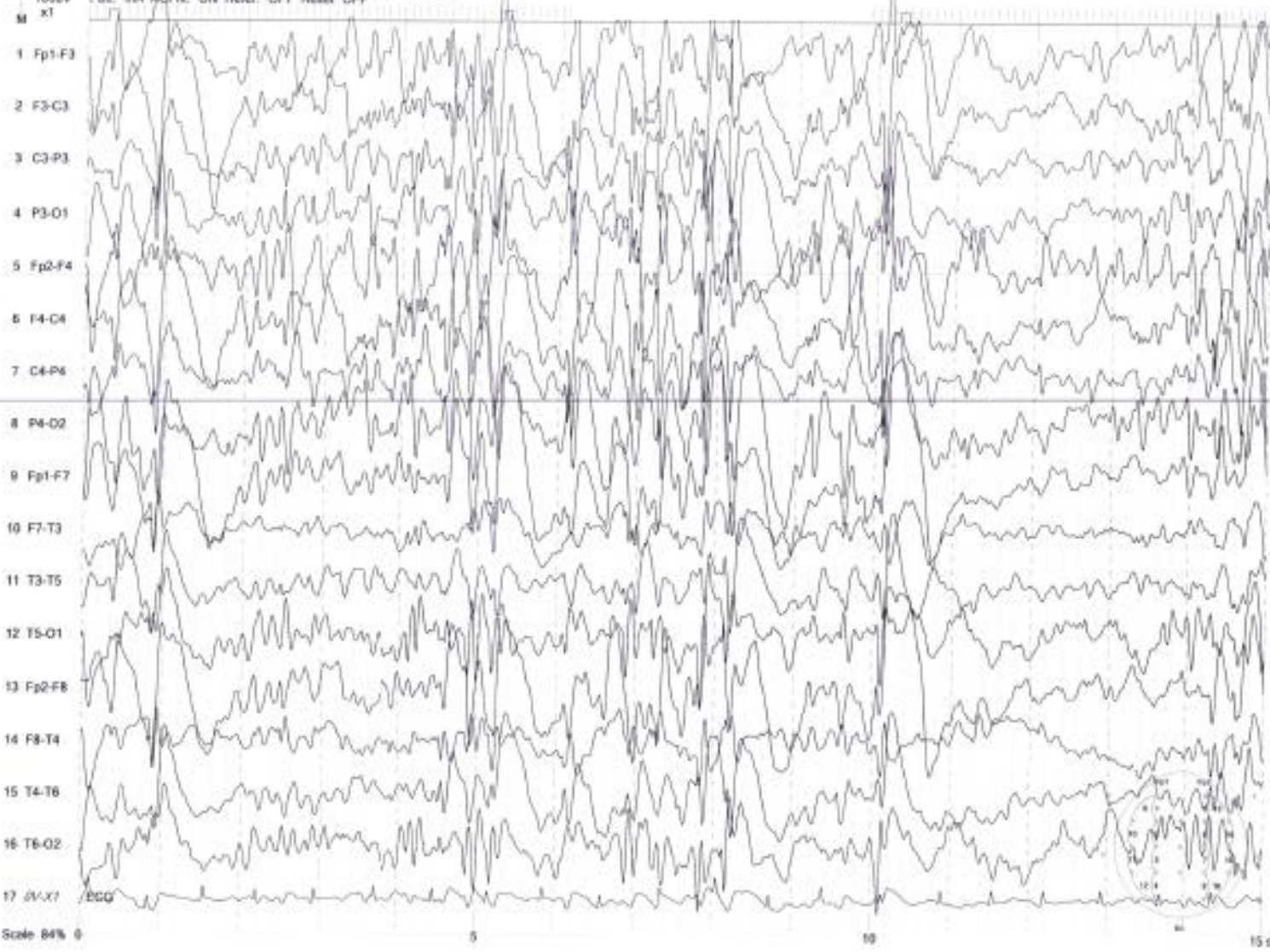
5

10

15

15 u

SENS 10:00:32(0000:26:46) [SENS *10 HF *15 TC 0.3 CAL *50]
100uV Pos. *31A AC/FIL *ON Ref. *OFF Res. *OFF



SENS 100uV
a1

09/25/28(000.0142)

(SENS *10 HF *15 TC *0.3 CAL *50)

PatL *100 AC/FIL *DN Refer *OFF Reset *OFF

M

1 Fp1-F3

2 F3-C3

3 C3-P3

4 P3-O1

5 Fp2-F4

6 F4-C4

7 C4-P4

8 P4-O2

9 Fp1-F7

10 F7-T3

11 T3-T5

12 T5-O1

13 Fp2-F8

14 F8-T4

15 T4-T8

16 T8-O2

17 O1-A1

Scale 84% 0

5

10

15

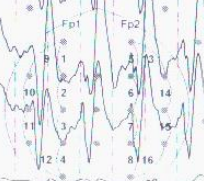
15 s

SENS 15:59:35[0000:15:48] [SENS 7 HF 70 TC 0.1 CAL 50]
70uV
x1
Patt. IIIA ACfilt. ON Refer. OFF Reset OFF

Page 1

1 Fp1-F3
2 F3-C3
3 C3-P3
4 P3-O1
5 Fp2-F4
6 F4-C4
7 C4-P4
8 P4-O2
9 Fp1-F7
10 F7-T3
11 T3-T5
12 T5-O1
13 Fp2-F8
14 F8-T4
15 T4-T6
16 T6-O2
18 0V-X1 ECG

Scale 83% 0



SENS 12.26.500000.22.57] [SENS *10 HF *70 TC 0.1 CAL *50]
100uV
x1
Puls. *A AC Fil. *ON Refr. *OFF Rezet *OFF

Date: 06.02.2020 ID: 02
Name: MELISA YALCIN

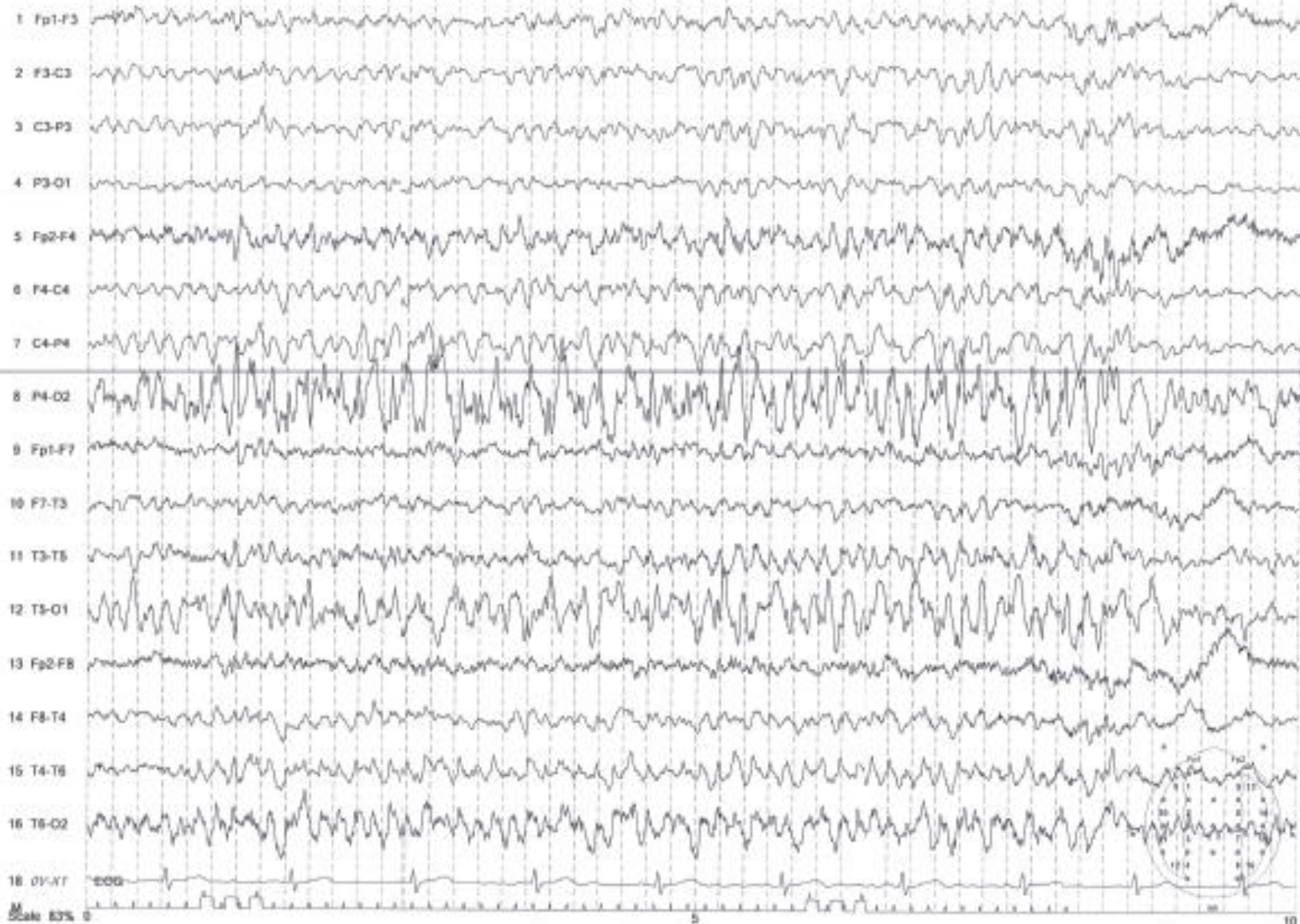
Page 1



SENS 12:27:09(0000.23:18) [SENS *7 HF *70 TC *8.1 CAL *50]
70uV Pat: *BA ACFB *ON Refr: *OFF Resol: *OFF
x1

Date: 06.02.2020 ID: 02
Name: MELISA YALCIN

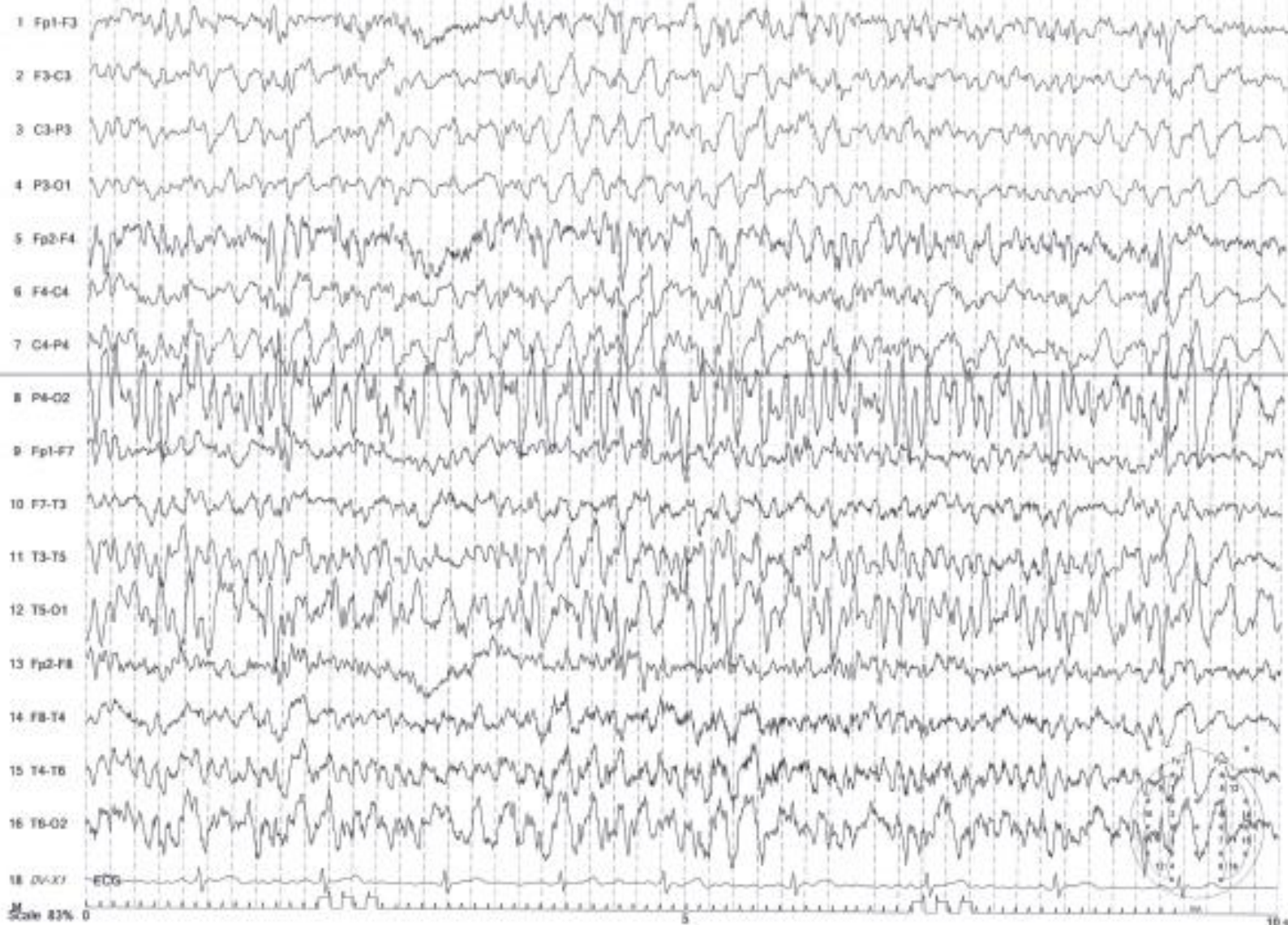
Page 1

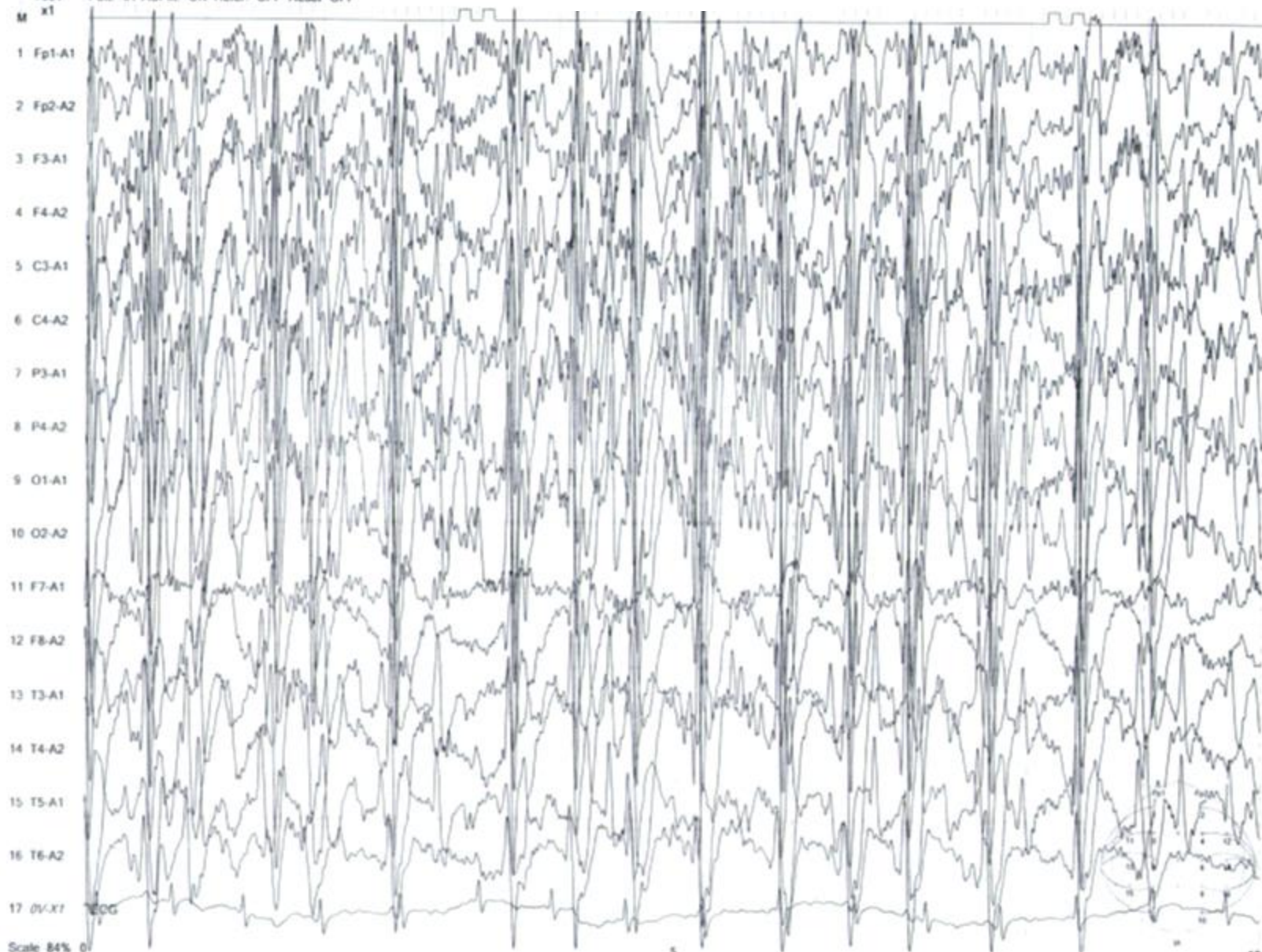


SEMS 12:27:28(0050:23:35) [SENS *7 HF *70 TC *0.1 CAL *50]
70uV PwE *8A ACF4L *ON Refr *OFF Reset *OFF
x1

Date: 06.02.2020 ID: 02
Name: MELISA YALCIN

Page 1





SENS 14:25:22(0050 (02.05) [SENS *7 *Rf *15 TC *03 CAL *50]
70uV Post *81A ACPR *ON Refet *OFF Reser *OFF

M XT

Power User: [unclear]

1 Fp1-F3

2 F5-C3

3 C3-F3

4 F3-O1

5 Fp2-F4

6 F4-C4

7 C4-P4

8 P4-O2

9 Fp1-F7

10 F7-T3

11 T3-T5

12 T5-O1

13 Fp2-F8

14 F8-T4

15 T4-T6

16 T6-O2

17 OV-X1

EOG

Scale 84% 0

5

10

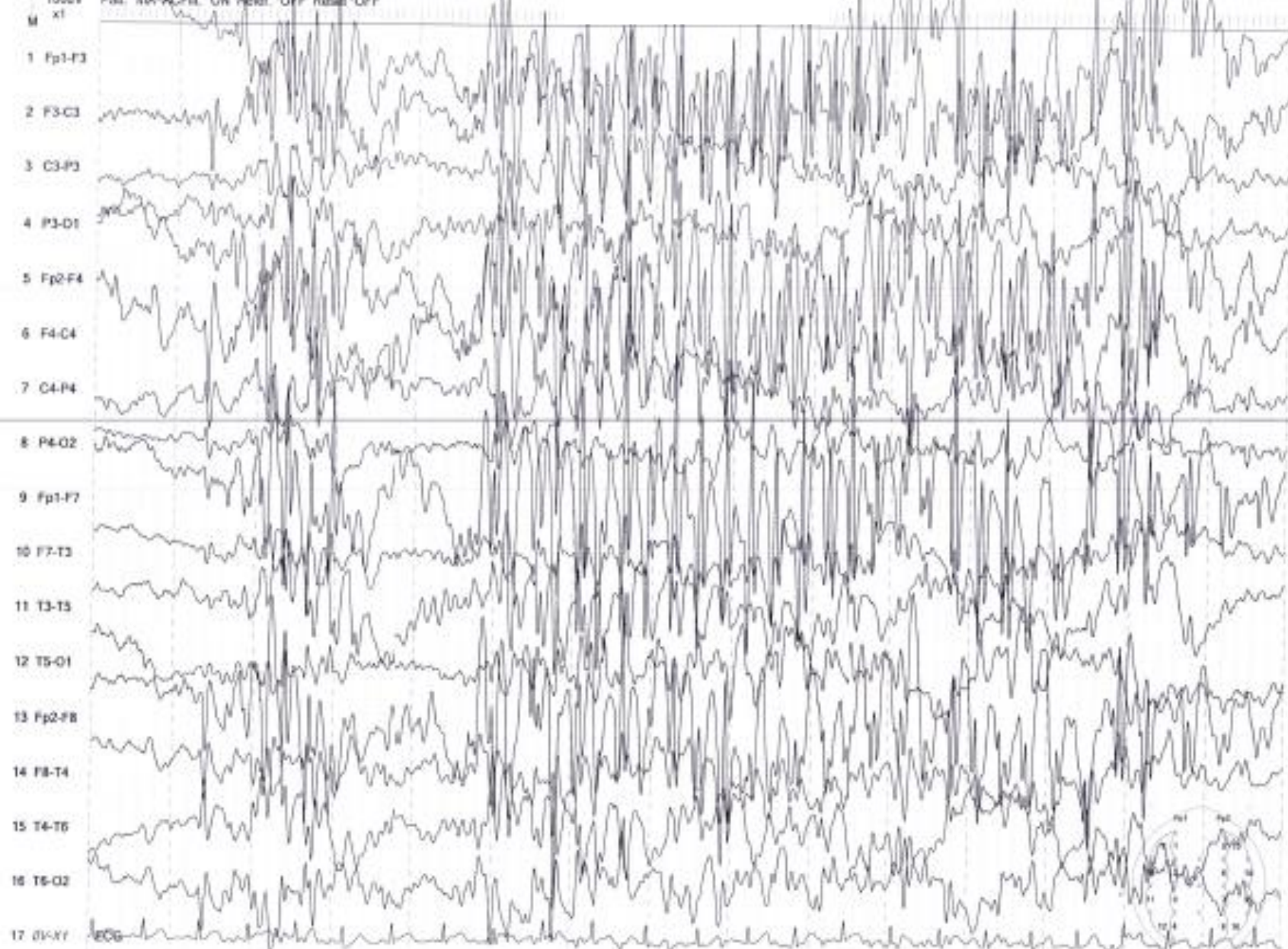
PHOTO 1946

15%

SENS 100uV
M x1
13:55:04 0002:24:57 [SENS *10 HE *15 TC *0.3 CAL *50]
Prt: *10A-ACFIL *ON Ref: *OFF Res: *OFF

100

Page 1



Scale 84% 0

5

10

15

15

SENS 18.31.16(0000.29.59) [SENS '7 HF '70 TC '0.1 CAL '50]
70uV Pat. 81A ACFB: 'ON Refer. OFF Reset 'OFF
x1

1 Fp1-F3

2 F3-C3

3 C3-P3

4 P3-O1

5 Fp2-F4

6 F4-C4

7 C4-P4

8 P4-O2

9 Fp1-F7

10 F7-T3

11 T3-T5

12 T5-O1

13 Fp2-F8

14 F8-T4

15 T4-T6

16 T6-O2

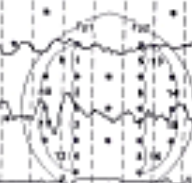
18 0V-X1

ECG

Scale 82% 0

5

10 s



SENS 18.12.25 0000:11:08 [SENS *NO HF *70 TC *01 CAL *50]
100uV
X1
Pat: 81A ACFix: *ON Refr: OFF Reset *OFF

1 Fp1-F3

2 F3-C3

3 C3-P3

4 P3-O1

5 Fp2-F4

6 F4-C4

7 C4-P4

8 P4-O2

9 Fp1-F7

10 F7-T3

11 T3-T5

12 T5-O1

13 Fp2-F8

14 F8-T4

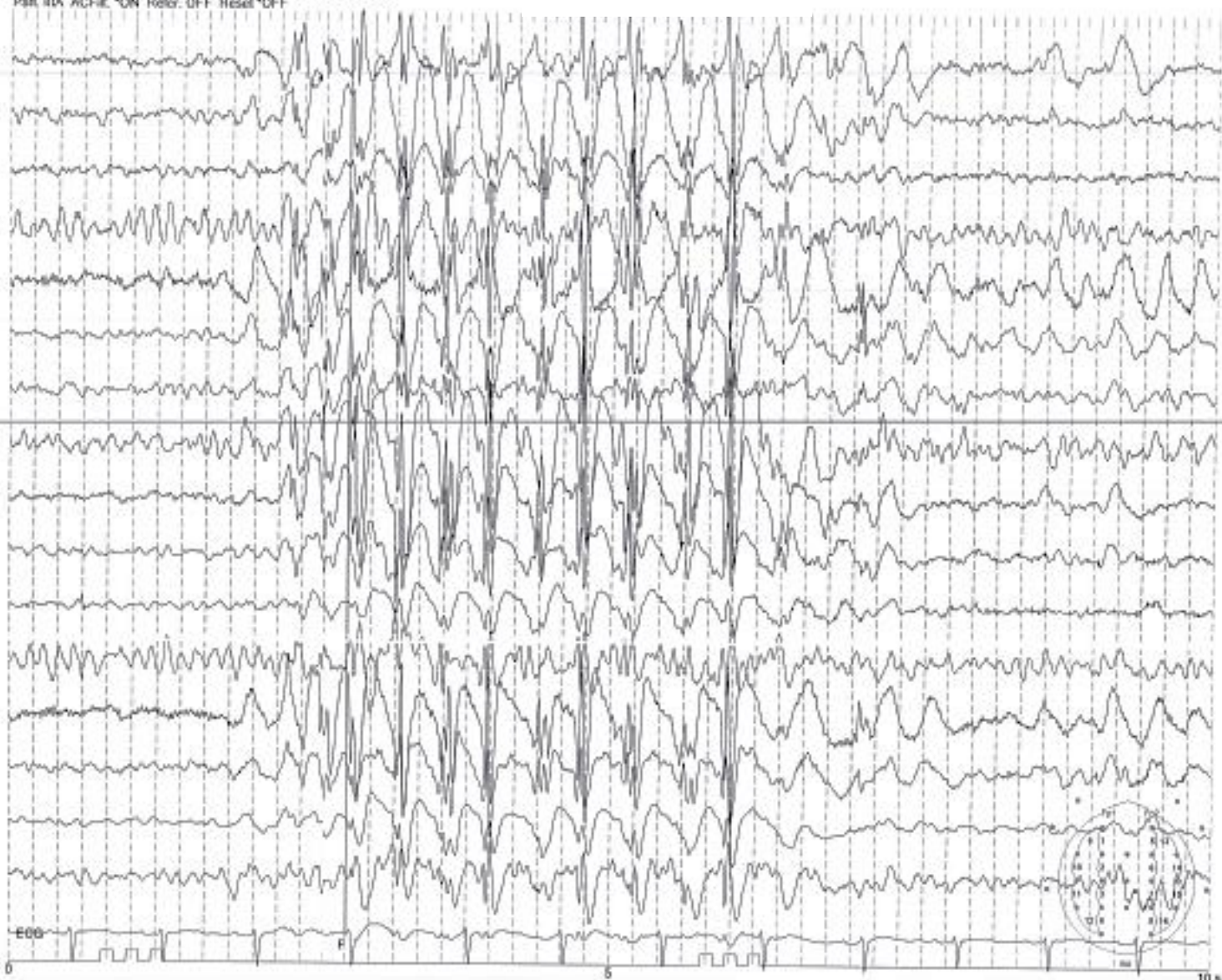
15 T4-T6

16 T6-O2

18 0V/0V

E00

Scale 83%



SENS 13:40:59(0000:06:52) [SENS 77 HF 75 TC 70.5 CAL 50]
70uV Post: *SIA ACFIL *ON Refer: *OFF Resol: *OFF

Date: 07/10/2008
Name: SBN.DCLAT

ID: 767103

Page 1

M X1

1 Fp1-F3

2 F3-C3

3 C3-P3

4 P3-O1

5 Fp2-F4

6 F4-C4

7 C4-P4

8 P4-O2

9 Fp1-F7

10 F7-T3

11 T3-T5

12 T5-O1

13 Fp2-F8

14 F8-T4

15 T4-T6

16 T6-O2

17 BV-VI

ECG
Body movements

Scale 84% 0

5

10

15 s

SENS 14/09/42[0000:00:32] [SENS *7 HF *35 TC *0.3 CAL *90]
70uV Pul. 110A ACFIL *ON Refer. *OFF Reset *OFF
x1

Date: 17.11.2005 ID: 193140
Name: Hasan Ali GULBUDAK

Page 1



SENS 70uV
x1
14-12-21(0000:03:10) [SENS *7 HF *35 TC *1.3 CAL *50]
Pat. *11A AC/BI *ON Refr *OFF Resol *OFF

Date: 17.11.2005 ID: 193140
Name: Hasan Ali GULBUDAK

Page 1



SENS 14:12:35(0000:03:25) [SENS *7 HF *35 TC *1.3 CAL *50]
7DuV Patl *15A ACP*8L *ON Refor *OFF Reest *OFF
M x1

Date: 17.11.2005 ID: 193146
Name: Hasan Ali GULBUDAK

Page 1

1 Fp1-F3

2 F3-C3

3 C3-P3

4 P3-O1

5 Fp2-F4

6 F4-C4

7 C4-P4

8 P4-O2

9 Fp1-F7

10 F7-T3

11 T3-T5

12 T5-O1

13 Fp2-F8

14 F8-T4

15 T4-T6

16 T6-O2

17 0V-X1

ECG

Scale 84% 0

5

10

15s

SENS 14:19:53 (0000:00:46) [SENS 7 HF 15 TC 03 CAL 50]
70uV Pk: 18A ACPR: 0W Refer: OFF Reset: OFF

Page 1

M X1

1 Fp1-F3

2 F3-C3

3 C3-P3

4 P3-O1

5 Fp2-F4

6 F4-C4

7 C4-P4

8 P4-O2

9 Fp1-F7

10 F7-T3

11 T3-T5

12 T5-O1

13 Fp2-F8

14 F8-T4

15 T4-T6

16 T6-O2

17 0V-X1

Scale: 84% 0

5

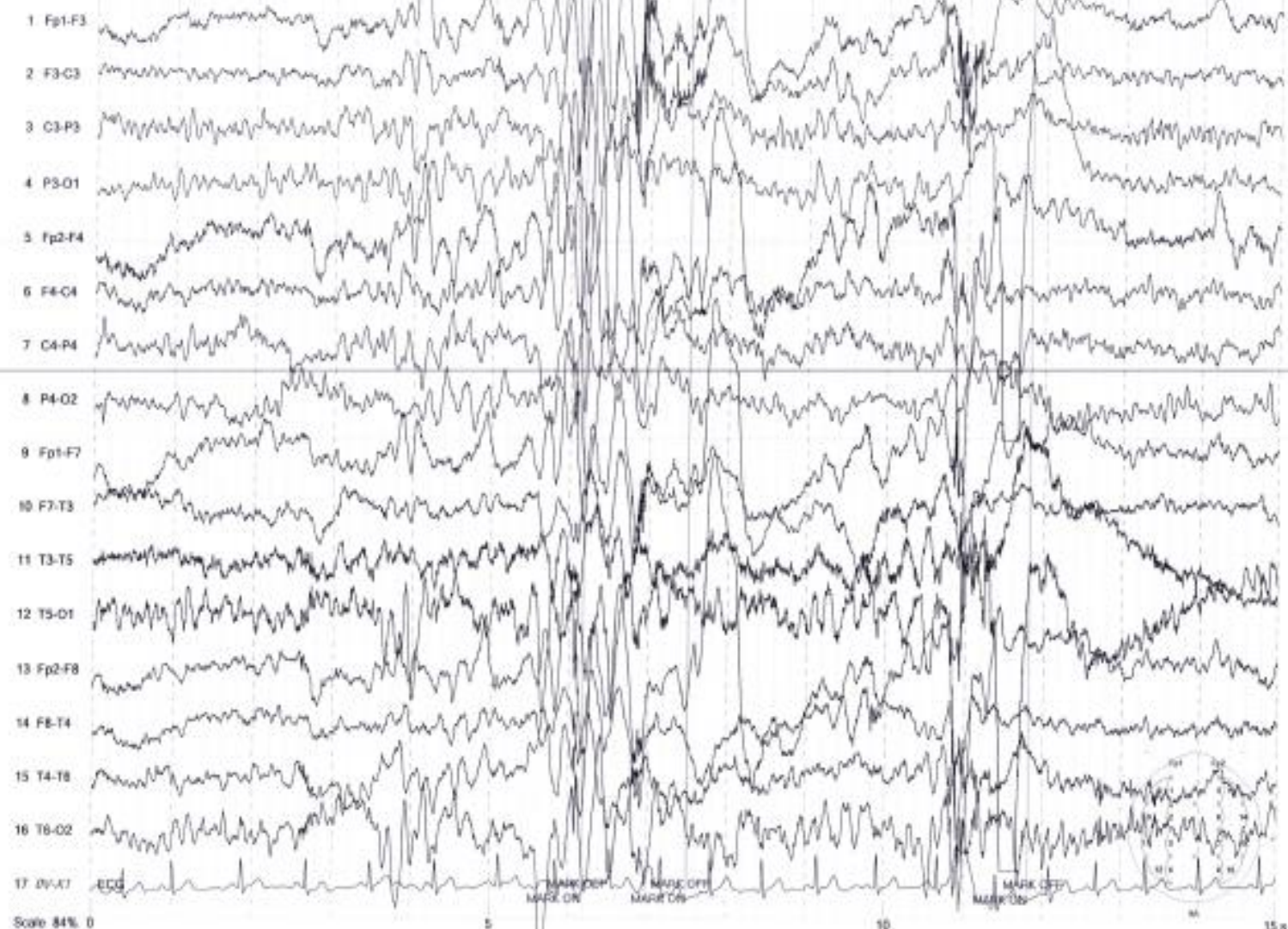
10

15

SENS 74:01:58(0000:08:57) [SENS *7 HF *70 TC *0.3 CAL *50]
70uV
M x1
Pul: *10A AC Fil: *ON Ref: *OFF Res: *OFF

Date: 14.02.2005 ID: 451907
Name: Com UNAL

Page 1



SENS 18:50:19/0000-01:45 [SENS *15 HP *70 TC *1.3 CAL 50]
150uV Ref: 5A ACFil: *ON Refic: OFF Reset *ON
X1

Page 1

1 Fp1-F3
2 F3-C3
3 C3-P3
4 P3-O1
5 Fp2-F4
6 F4-C4
7 C4-P4
8 P4-O2
9 Fp1-F7
10 F7-T3
11 T3-T5
12 T5-O1
13 Fp2-F8
14 F8-T4
15 T4-T6
16 T6-O2
18 DV-X1 -Ecg

Scale 84% 0



SENS 18-48-48(0000:00:14) [SENS *10 HF *70 TC *0.3 CAL *50]
100uV
x1
Pari 31A ACP&: *ON Refr: OFF Reset *ON

1 Fp1-F3

2 F3-C3

3 C3-P3

4 P3-O1

5 Fp2-F4

6 F4-C4

7 C4-P4

8 P4-O2

9 Fp1-F7

10 F7-T3

11 T3-T5

12 T5-O1

13 Fp2-F8

14 F8-T4

15 T4-T8

16 T8-O2

18 DV-X1

Eco

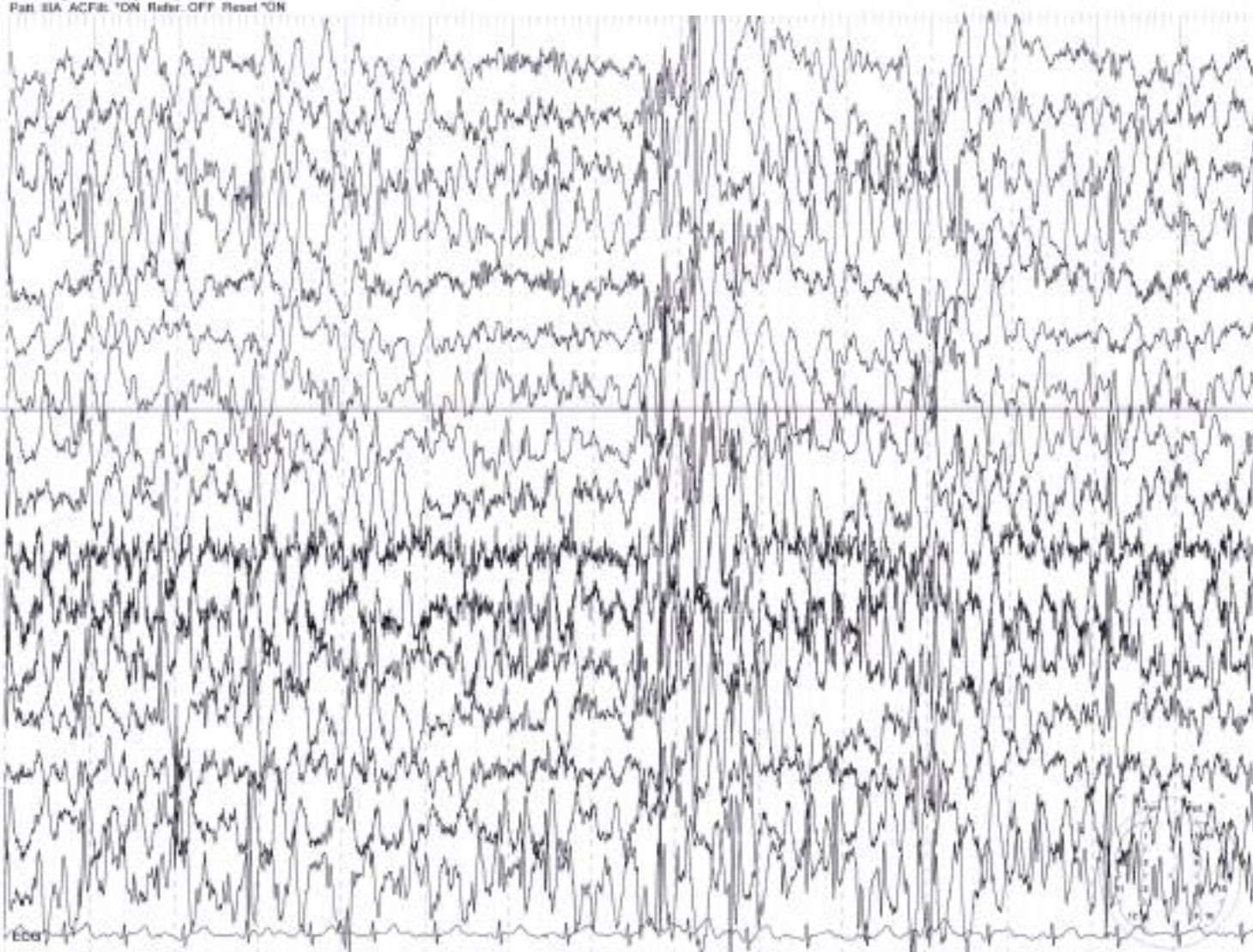
Scale 84% 0

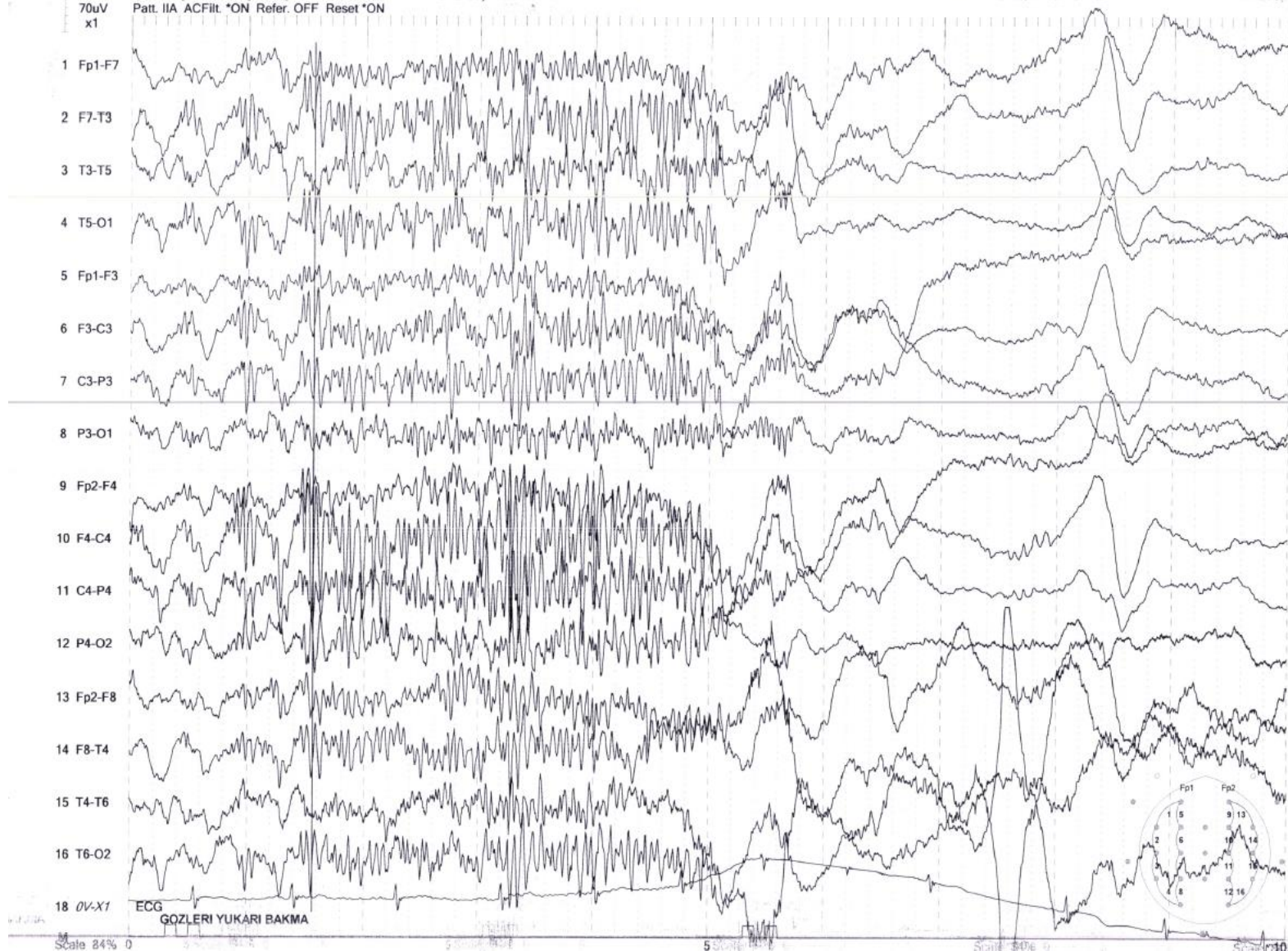
5

10

15

15 s





SENS 1840.250000.00:40 [SENS *10 HF *70 TC *8.3 CAL *50]
PAIL 10A AC100 *ON Refer OFF Reset *ON

Date: 07.07.2015 ID: 267
Name: NAVVA NUR CIN

Page

- 1 Fp1-F3
- 2 F3-C3
- 3 C3-P3
- 4 P3-O1
- 5 Fp2-F4
- 6 F4-C4
- 7 C4-P4
- 8 P4-O2
- 9 Fp1-F7
- 10 F7-T3
- 11 T3-T5
- 12 T5-O1
- 13 Fp2-F8
- 14 F8-T4
- 15 T4-T8
- 16 T8-O2
- 18 2Vx17 ECG

Scale 84% 0

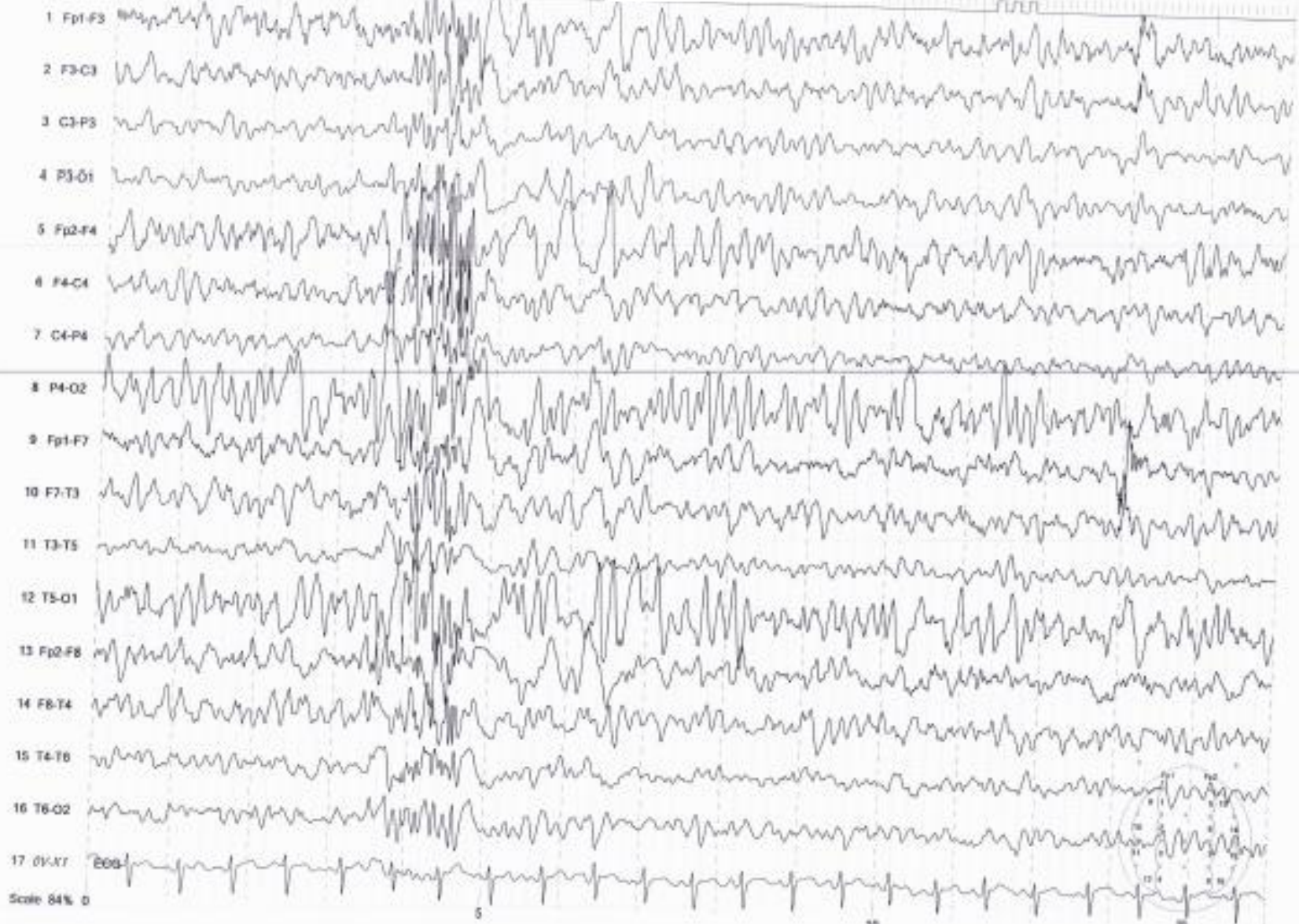
5

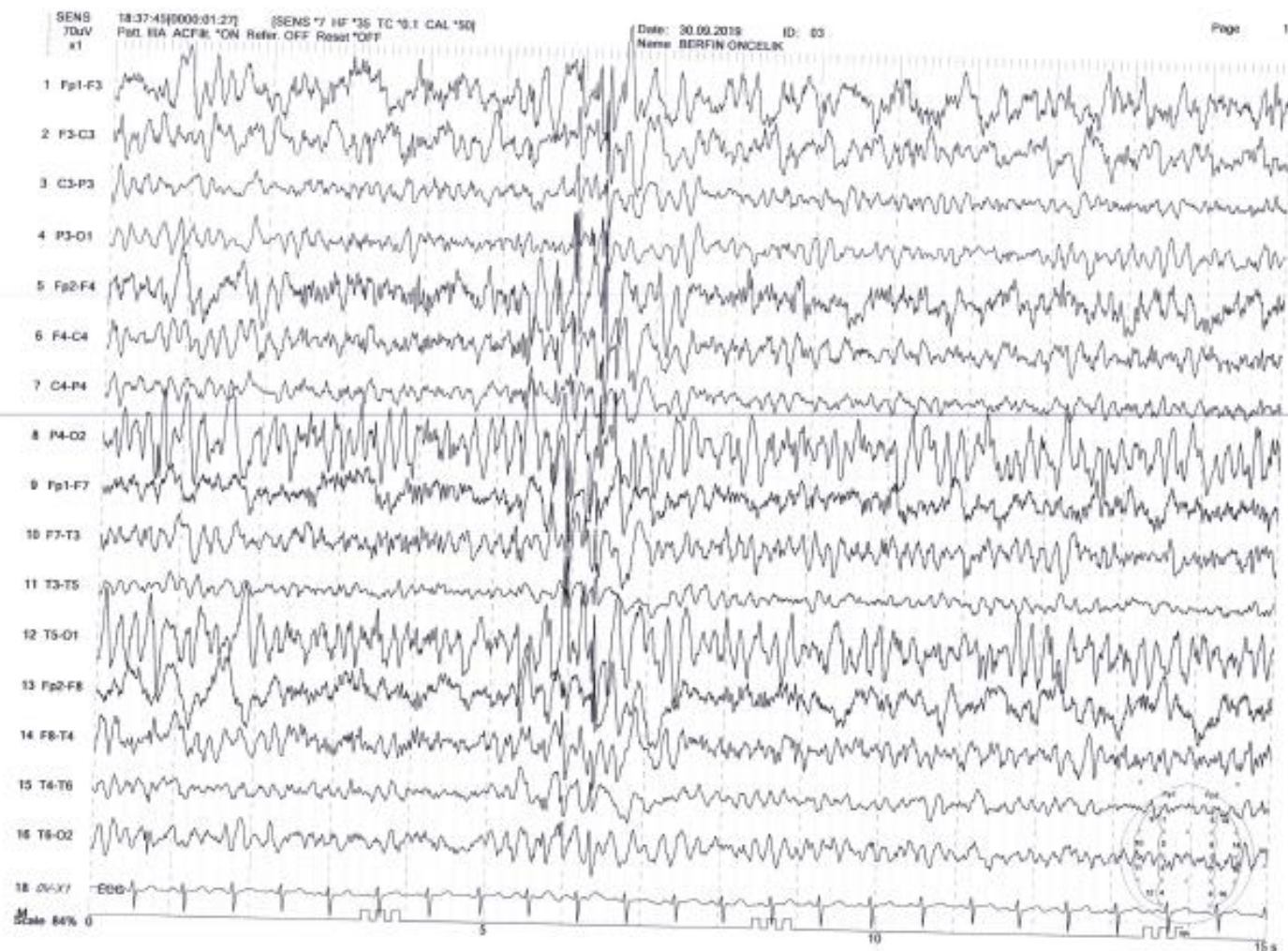
10

15 s

SENS 18:53:57(000017.33) [SENS *7 HF *55 TC 0.1 CAL *50]
70uV Post: *91A ACFlt: *ON Ref: *OFF Res: *OFF
x1

Page 1





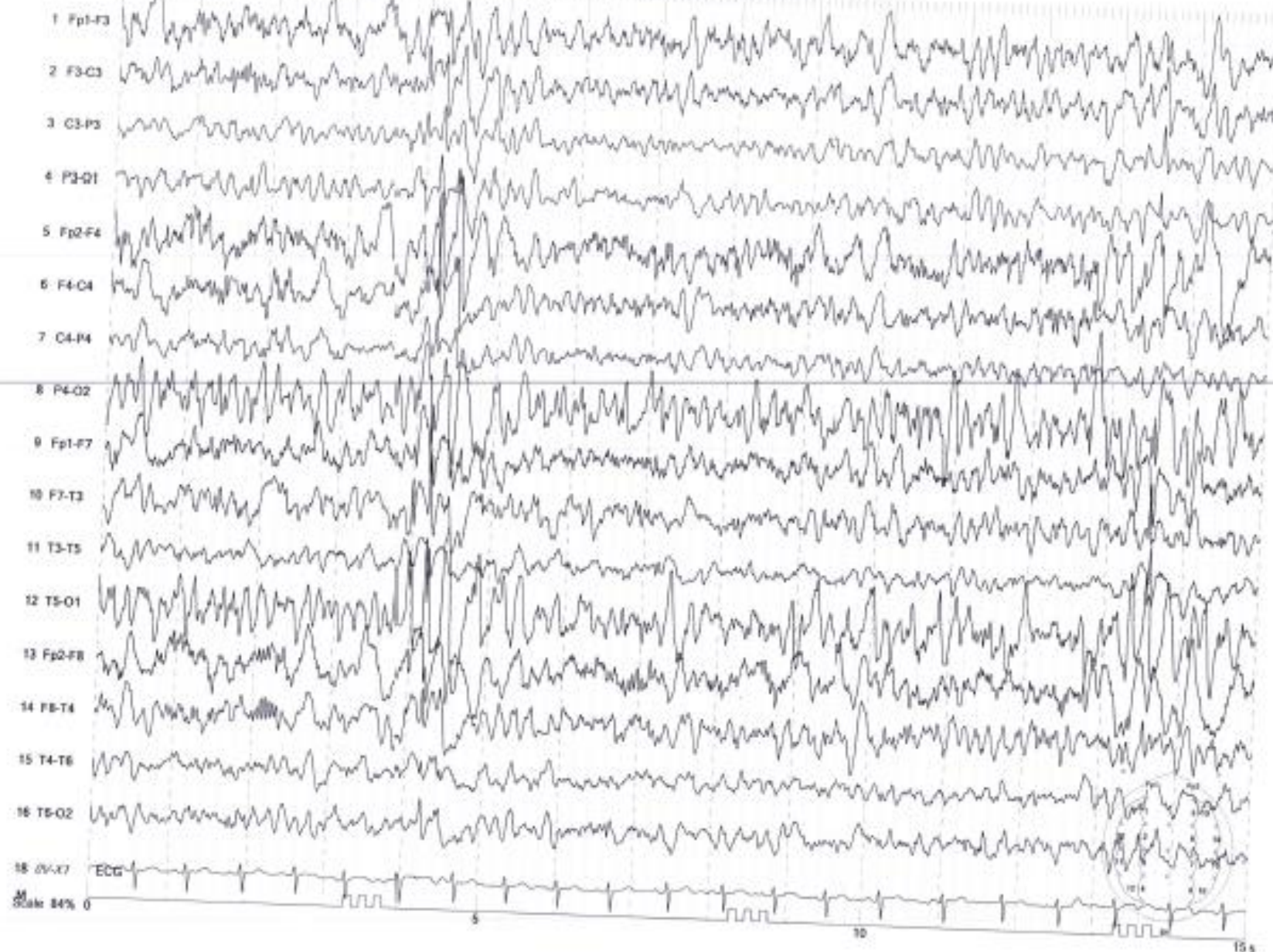
SENS
70uV
x1

18-47-15(2009-10-57)

(SENS:7 HF:35 TC:0.1 CAL:50)
P61:BA ACRIL:ON Refr:OFF Rese:OFF

Date: 30.09.2019 ID: 03
Name: BERFIN ONCELİK

Page 1



SENS 15:33:35[0000:27:22] [SENS *10 HF *35 TC *0.1 CAL *50]
100uV
x1
Puls. IIR. ACFR1 *ON Refer. OFF Reset *OFF

1 Fp1-F3

2 F3-C3

3 C3-P3

4 P3-O1

5 Fp2-F4

6 F4-C4

7 C4-P4

8 P4-O2

9 Fp1-F7

10 F7-T3

11 T3-T5

12 T5-O1

13 Fp2-F8

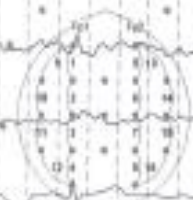
14 F8-T4

15 T4-T6

16 T6-O2

18 0V-X1

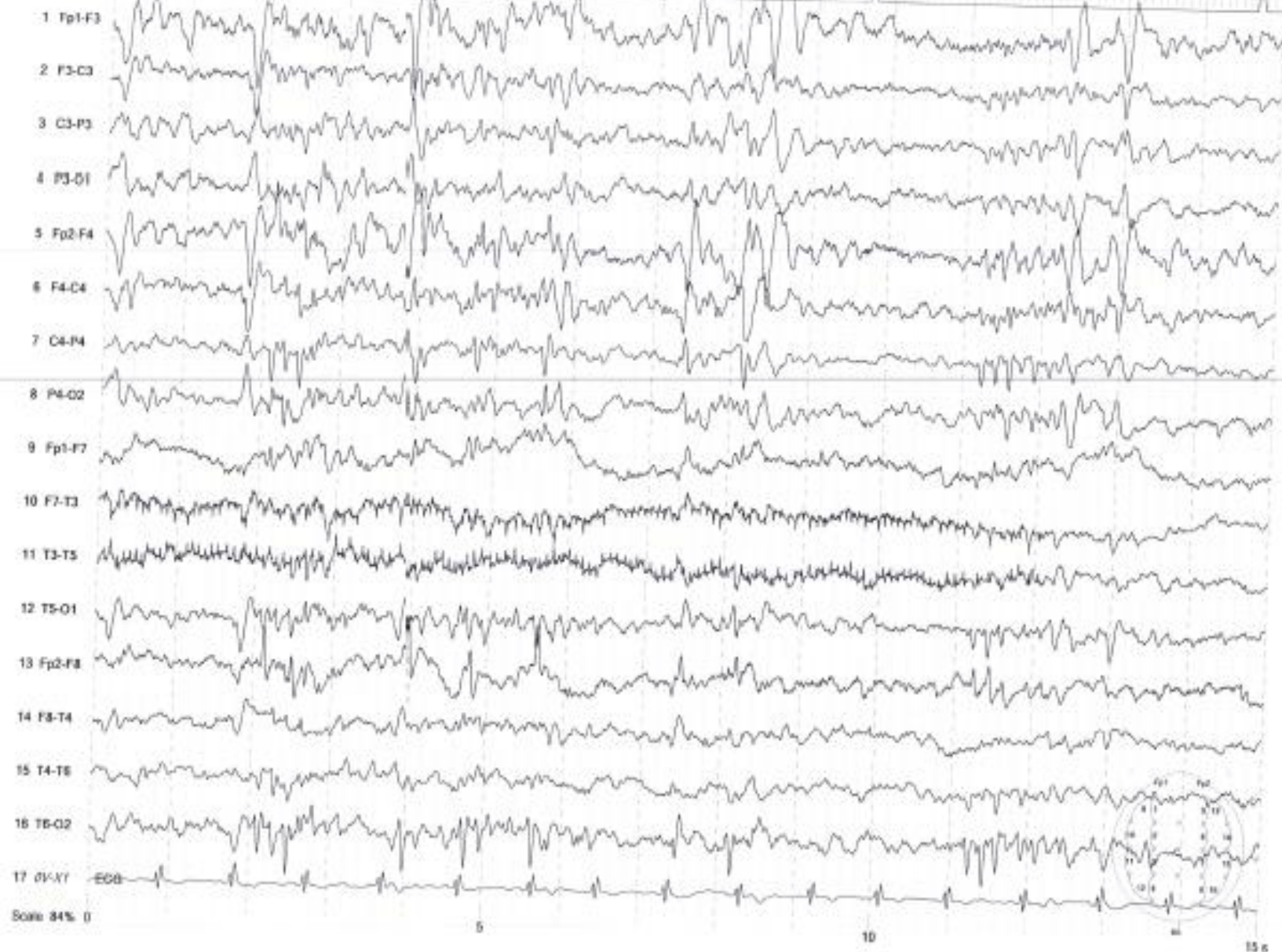
ECG



Scale 83% 0

5

10 s



SENS
70uV
x1

09:55:08(0000:30:22)

[SENS:7 HF:35 TC:0.3 CAL:50]
Pulse:10A ACFix:ON Refer:OFF Reset:OFF

Date: 14.01.2020

ID: 100137274

Page

1

M

1 Fp1-F3

2 F3-C3

3 C3-P3

4 P3-O1

5 Fp2-F4

6 F4-C4

7 C4-P4

8 P4-O2

9 Fp1-F7

10 F7-T3

11 T3-T5

12 T5-O1

13 Fp2-F8

14 F8-T4

15 T4-T6

16 T6-O2

17 DEXI

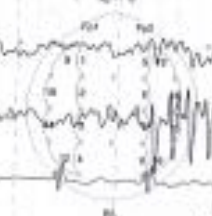
ECG

Scale 84% 0

5

10

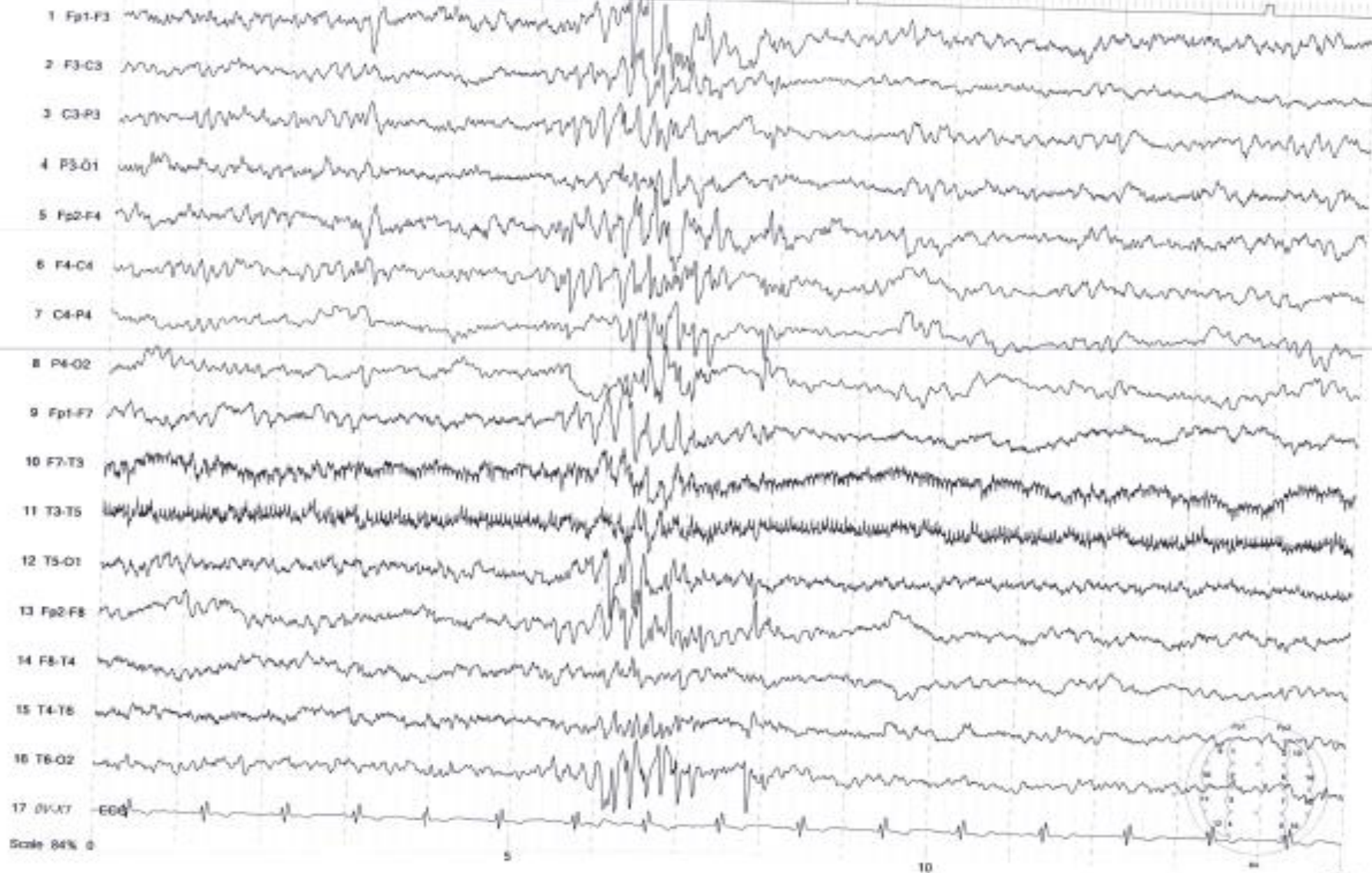
15 s



SENS 09:34:25[0000:29:38] [SENS *7 HF *35 TC 0.3 CAL *50]
70uV Ref: *15A ACFB: *ON Refr: *OFF Reson: *OFF
M ±1

Date: 14.01.2020 ID: 100137274
Name: GOKAYATLE

Page 1



SENS 14:40:28(0000:25:17) [SENS *7 HF *70 TC *0 *1 CAL *50]
70uV Pch *18A ACFIL *ON Refor *OFF Resol *OFF
x1

Date: 05.02.2020 ID: 02
Name: MUSTAFA CALISKAN

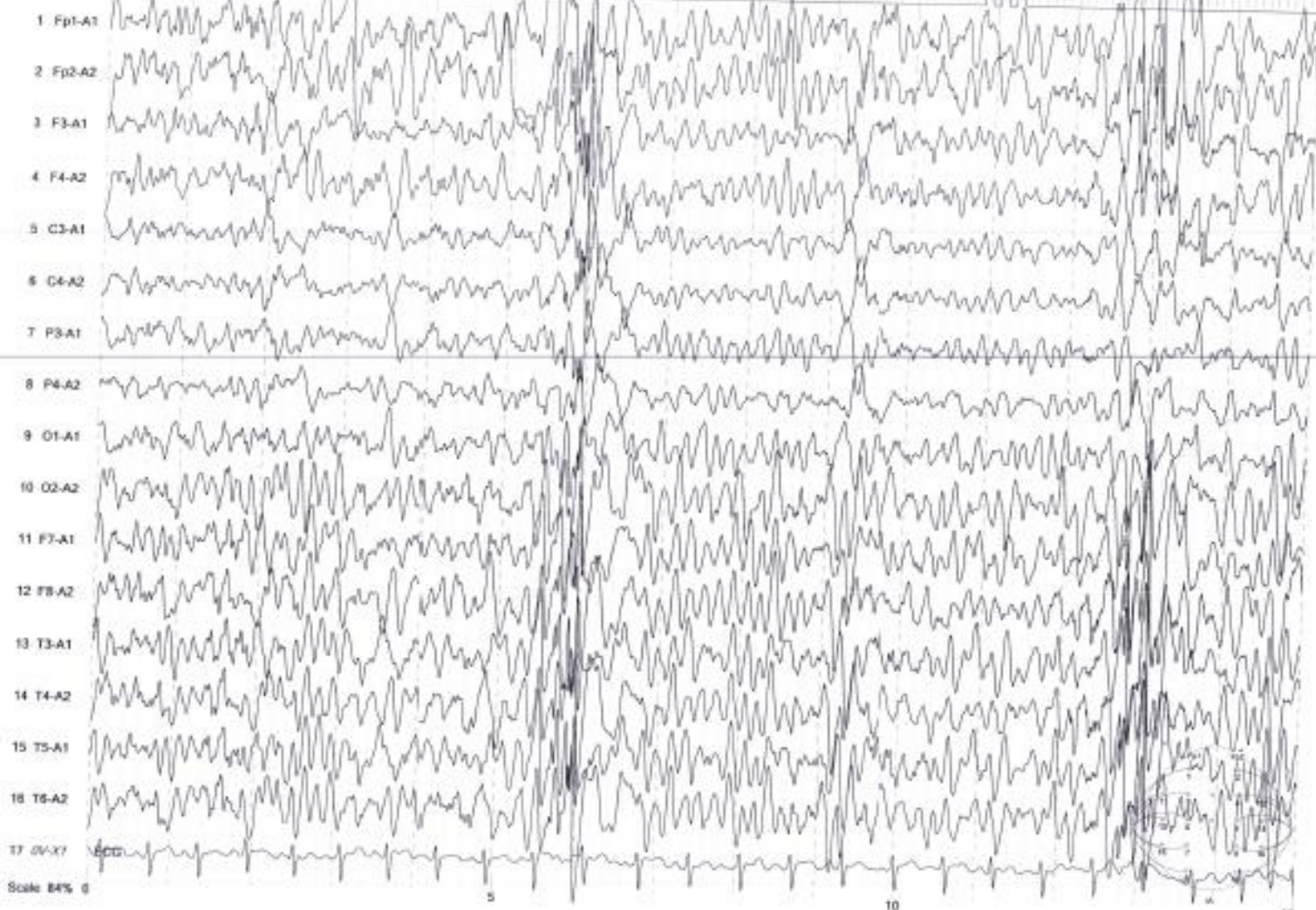
Page 1



SENS 18:50:33(0000:14:15) [SENS *7 HF *15 TC *0.1 CAL *50]
70uV Post: *1A ACF81 *ON Refer: *OFF Reset: *OFF
M x1

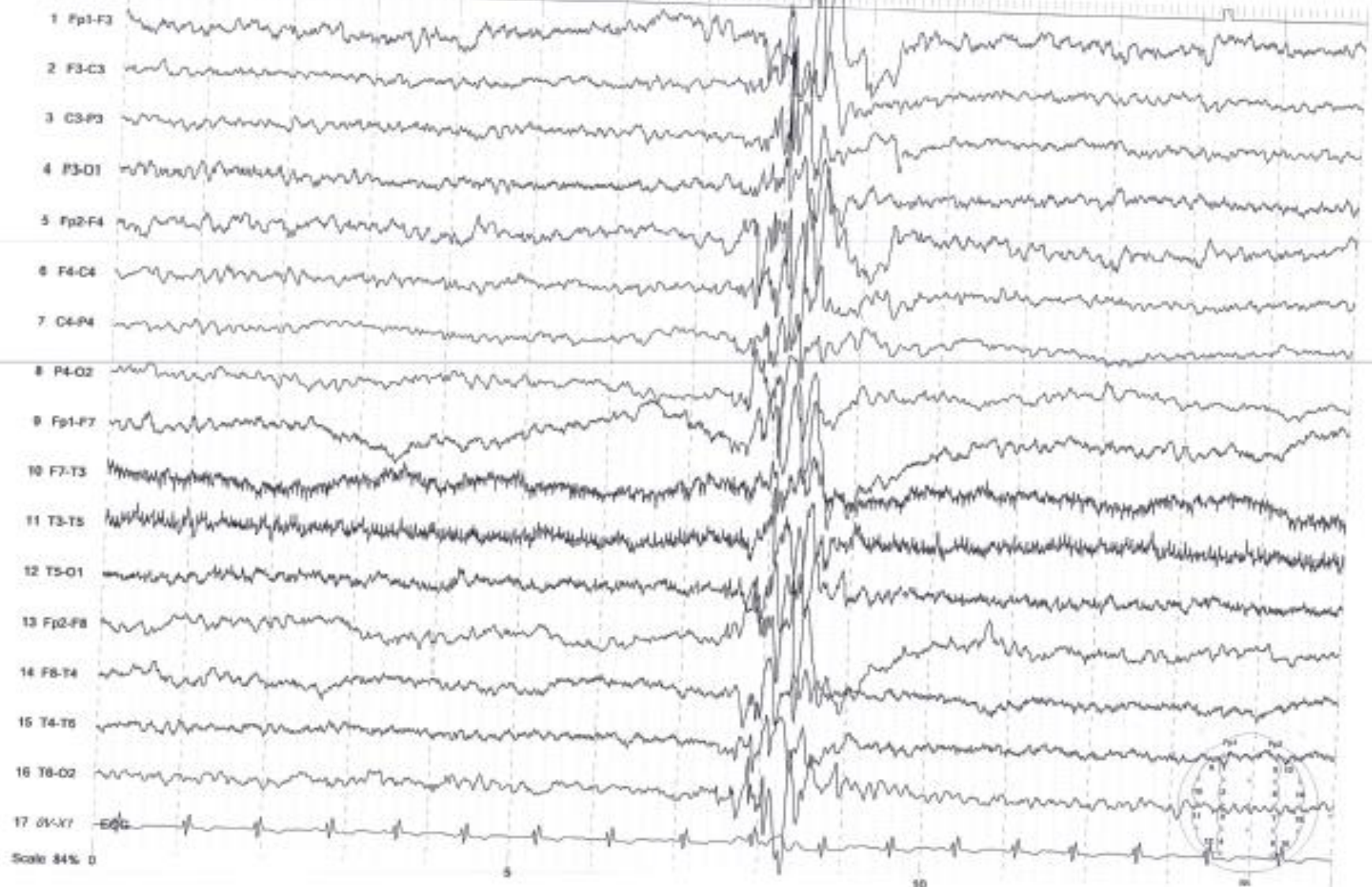
Date: 30.09.2019 ID: 03
Name: BERFIN ONCELİK

Page 1



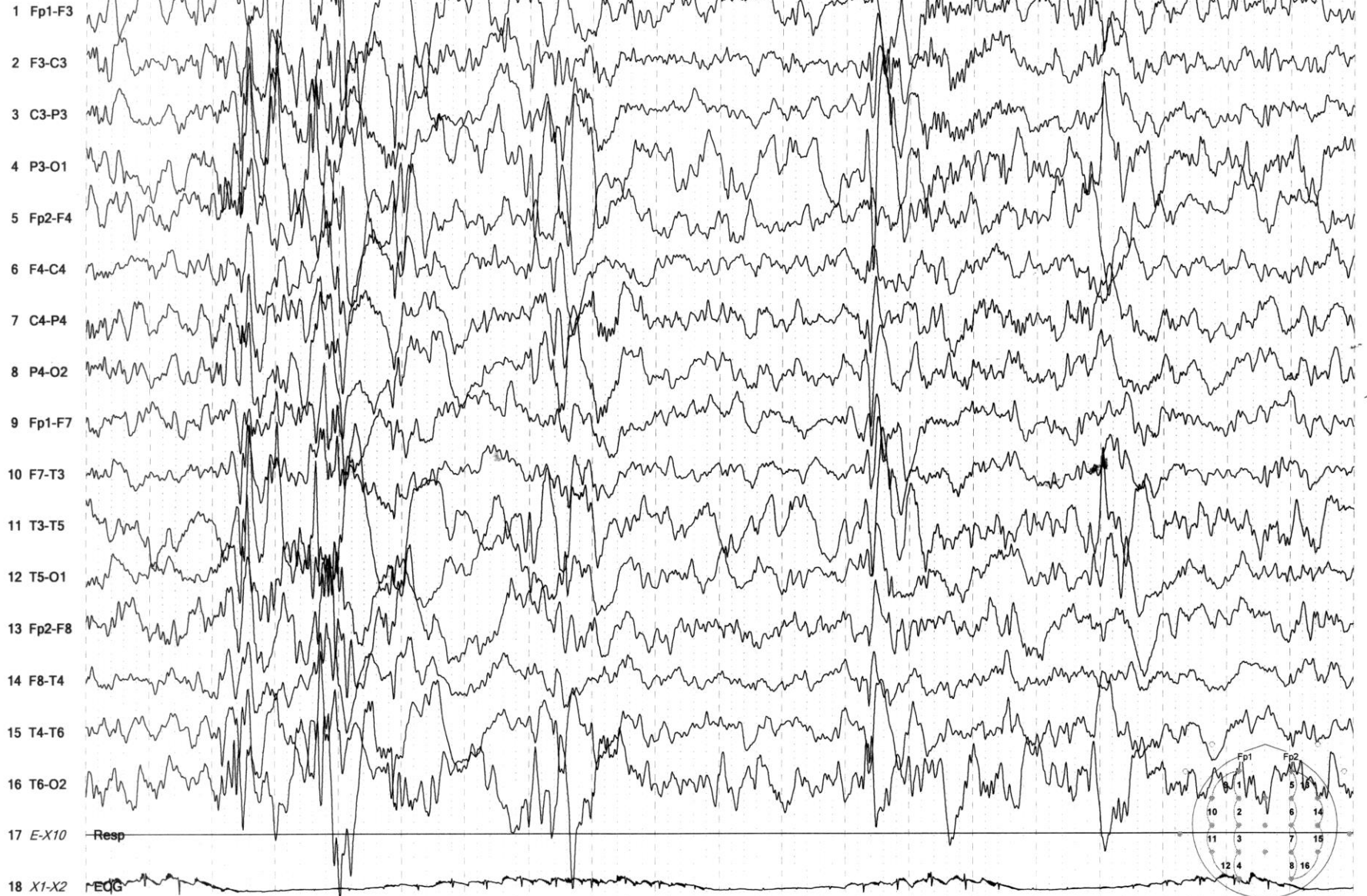
SENS 70uV x1
09:52:10(0000:27:24) [SENS *7 HIF *35 TC *1.3 CAL *50]
PUL *11A ACFIL *ON Refs *OFF Reset *OFF

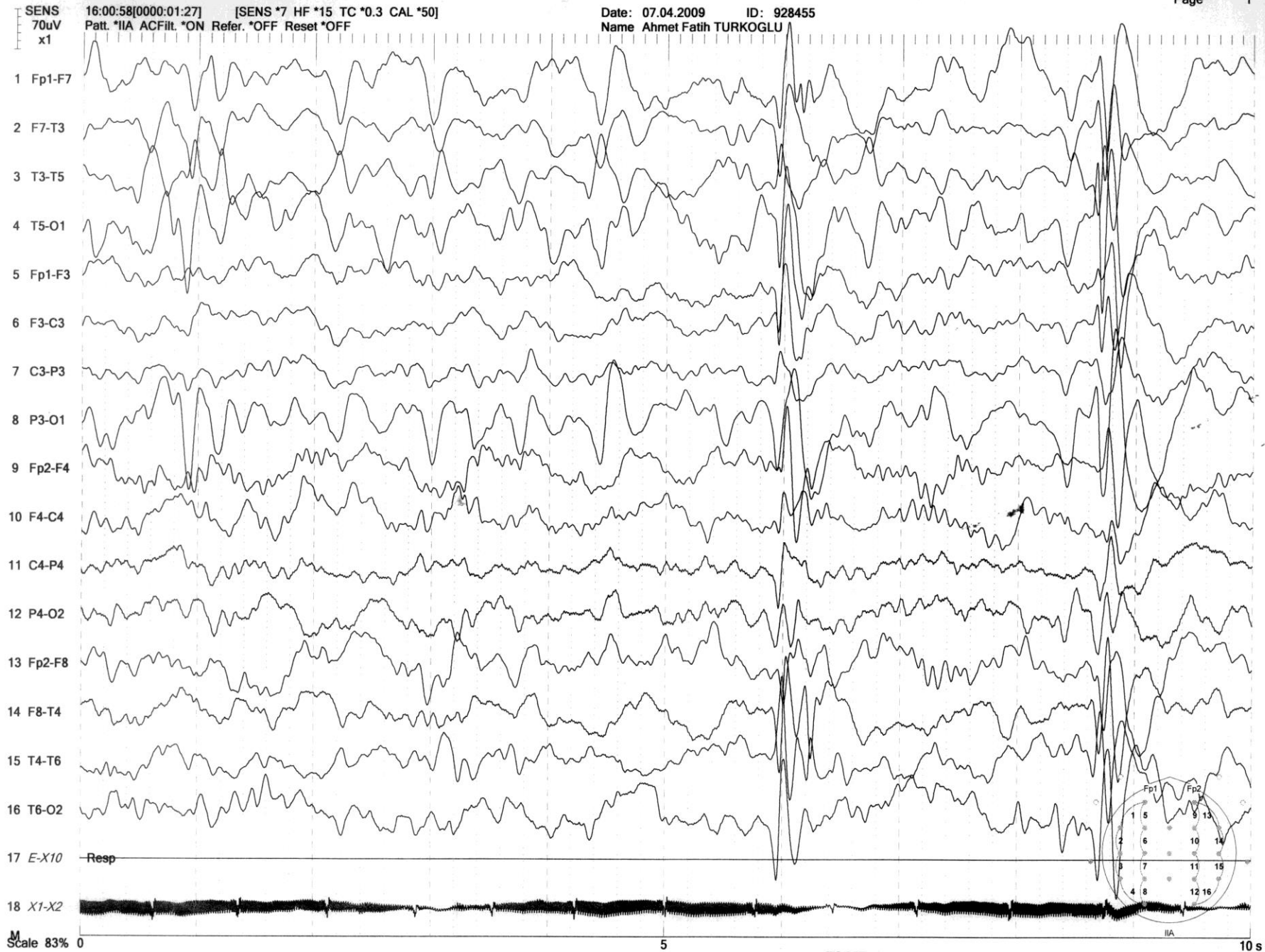
Date: 14.01.2020 ID: 100137274
Name: GOKAY ATILE



SENS 70uV x1
 13:07:39[0000:04:34] [SENS 7 HF *15 TC *0.3 CAL *50]
 Patt. *IIIA ACfilt. *ON Refer. *OFF Reset *OFF

Date: 13.03.2008 ID: 717097
 Name Sevim SENTURK

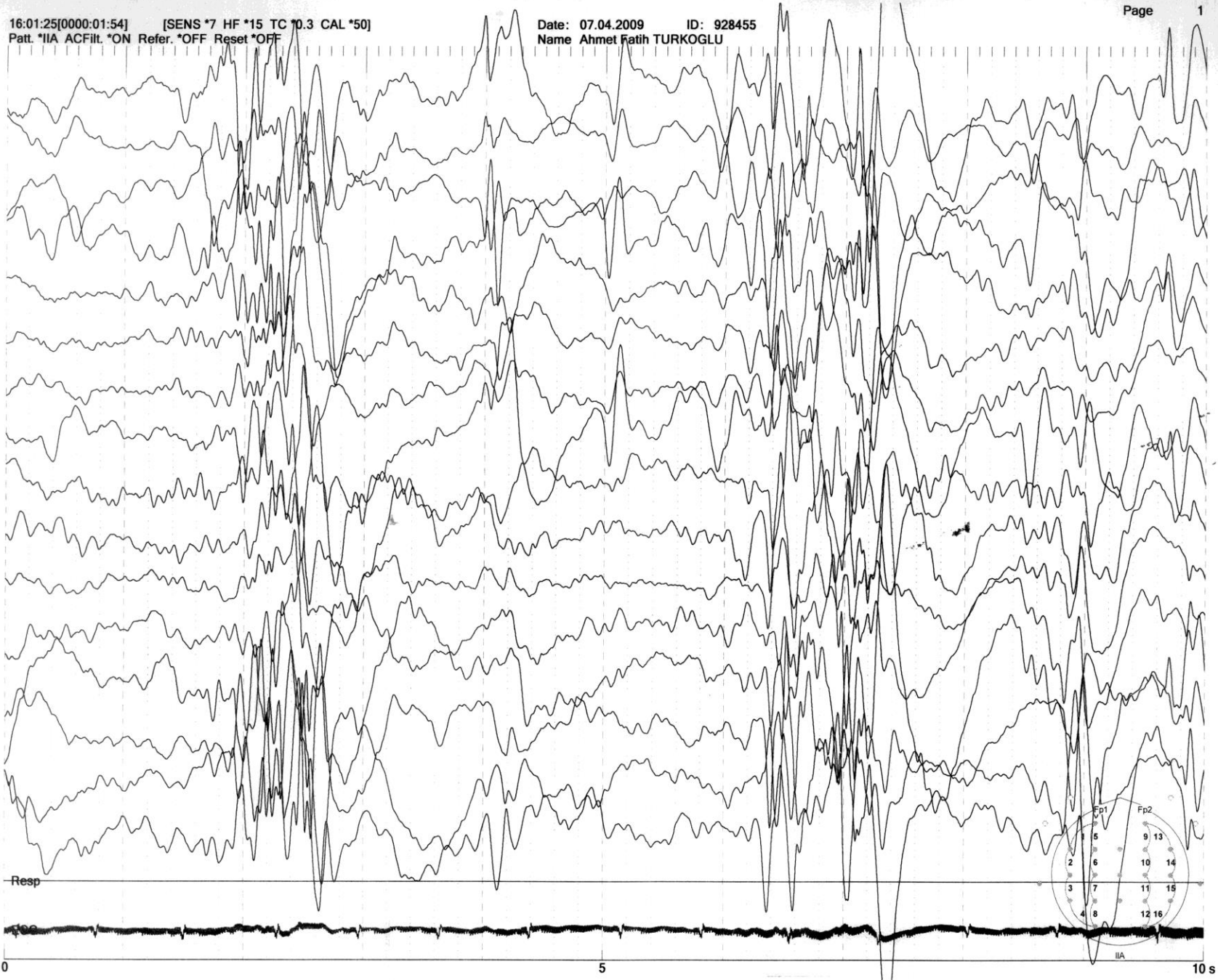


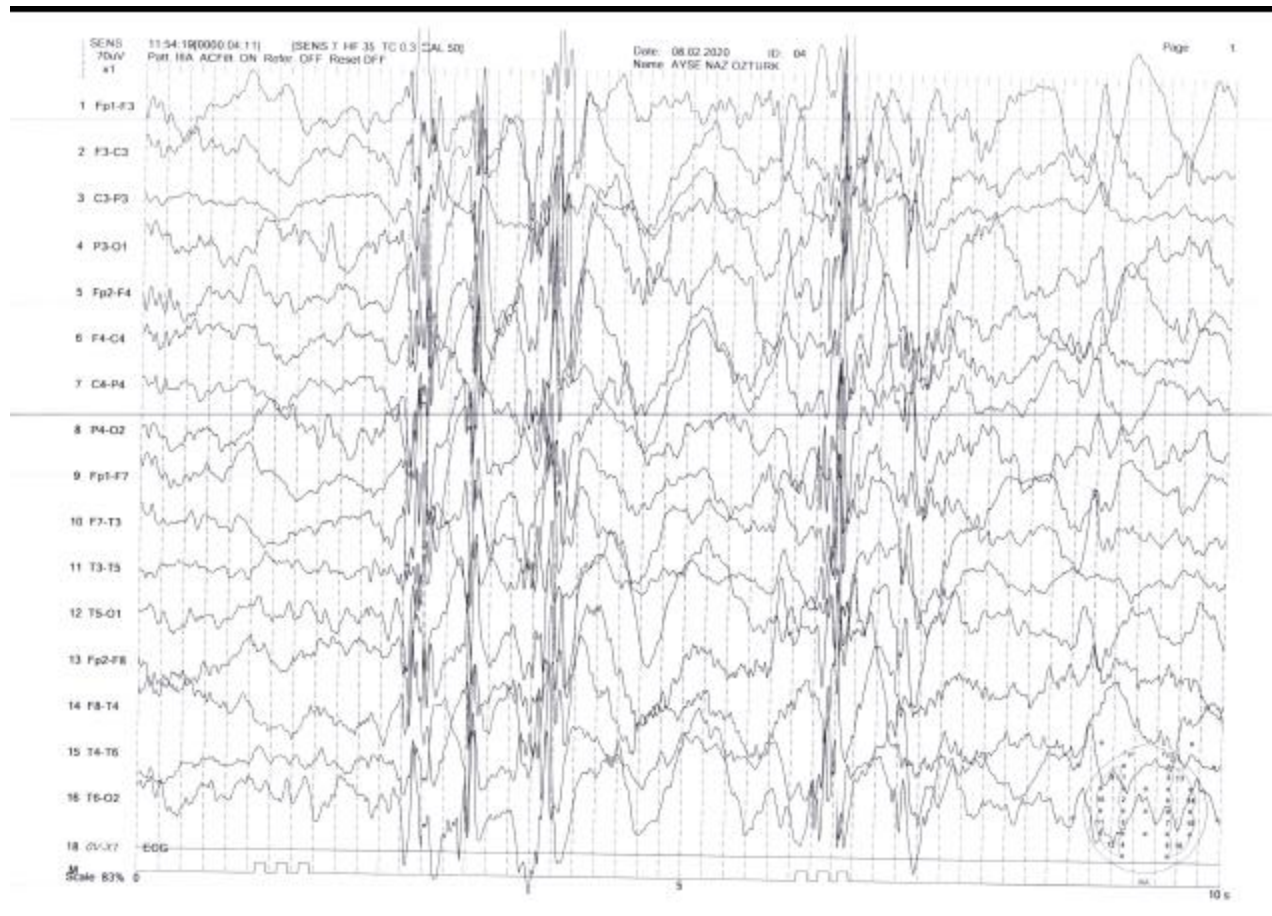


SENS 70uV x1
 16:01:25(0000:01:54) [SENS *7 HF *15 TC *0.3 CAL *50]
 Patt. *IIA ACfilt. *ON Refer. *OFF Reset *OFF

Date: 07.04.2009 ID: 928455
 Name Ahmet Fatih TURKOGLU

- 1 Fp1-F7
- 2 F7-T3
- 3 T3-T5
- 4 T5-O1
- 5 Fp1-F3
- 6 F3-C3
- 7 C3-P3
- 8 P3-O1
- 9 Fp2-F4
- 10 F4-C4
- 11 C4-P4
- 12 P4-O2
- 13 Fp2-F8
- 14 F8-T4
- 15 T4-T6
- 16 T6-O2
- 17 E-X10
- 18 X1-X2





SENS 70uV x1
11:54:19(0000.04:11) (SENS *7 HF *35 TC *03 CAL *50)
Par: *1A AC/FIL *DN Ref: *OFF Resol: *OFF

Date: 06.02.2020 ID: 04
Name: AYSE NAZ OZTURK

Page 1

1 Fp1-A1

2 Fp2-A2

3 F3-A1

4 F4-A2

5 C3-A1

6 C4-A2

7 P3-A1

8 P4-A2

9 O1-A1

10 O2-A2

11 F7-A1

12 F8-A2

13 T3-A1

14 T4-A2

15 T5-A1

16 T6-A2

17 OV-X1

EOG

Scale 83% 0

5

10s



Sekonder bilateral

Senkroni

Fp

50

F7-T7

T7-P7

P7-O1

Fp2-F8

F8-T8

T8-P8

P8-O2

Fp1-F3

F3-C3

C3-P3

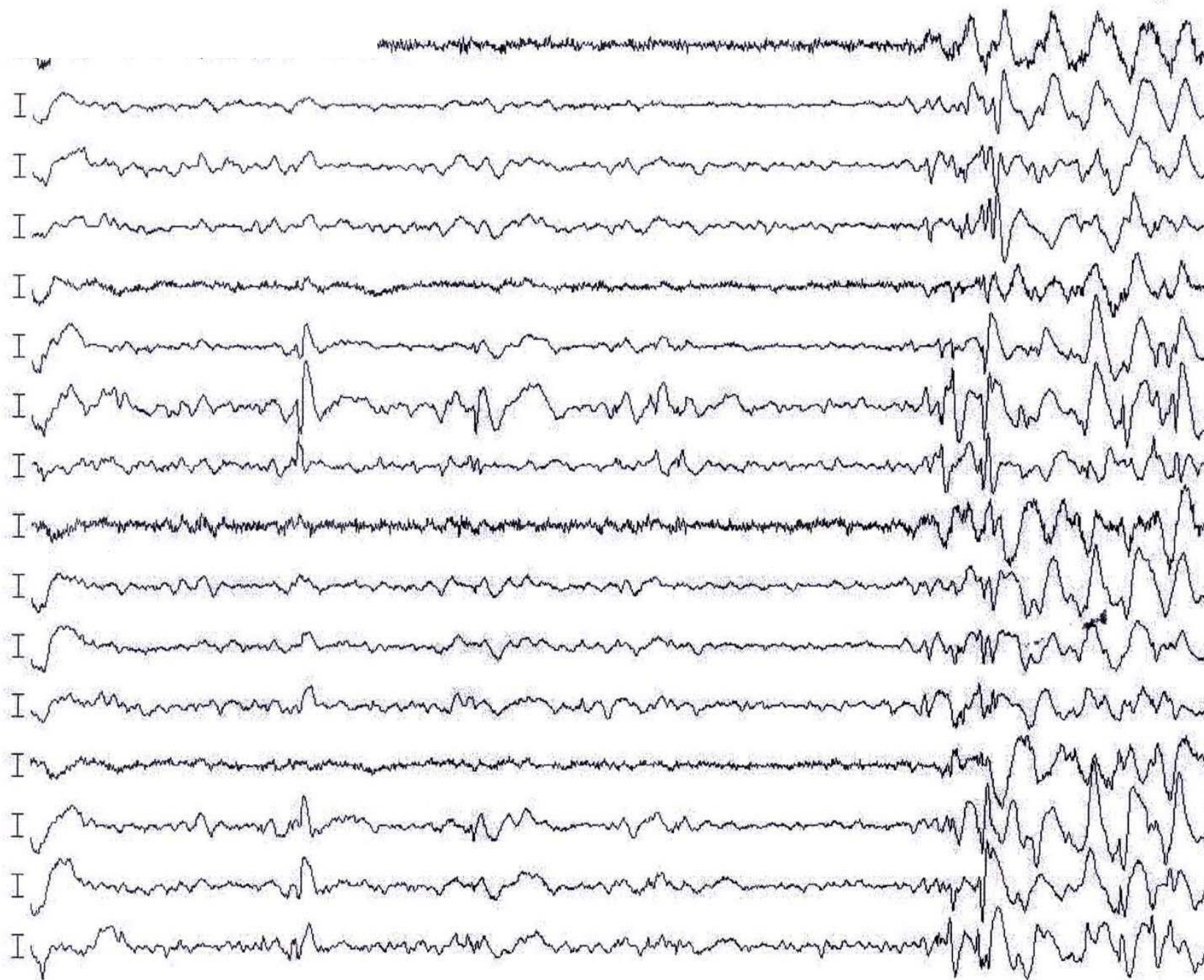
P3-O1

Fp2-F4

F4-C4

C4-P4

P4-O2

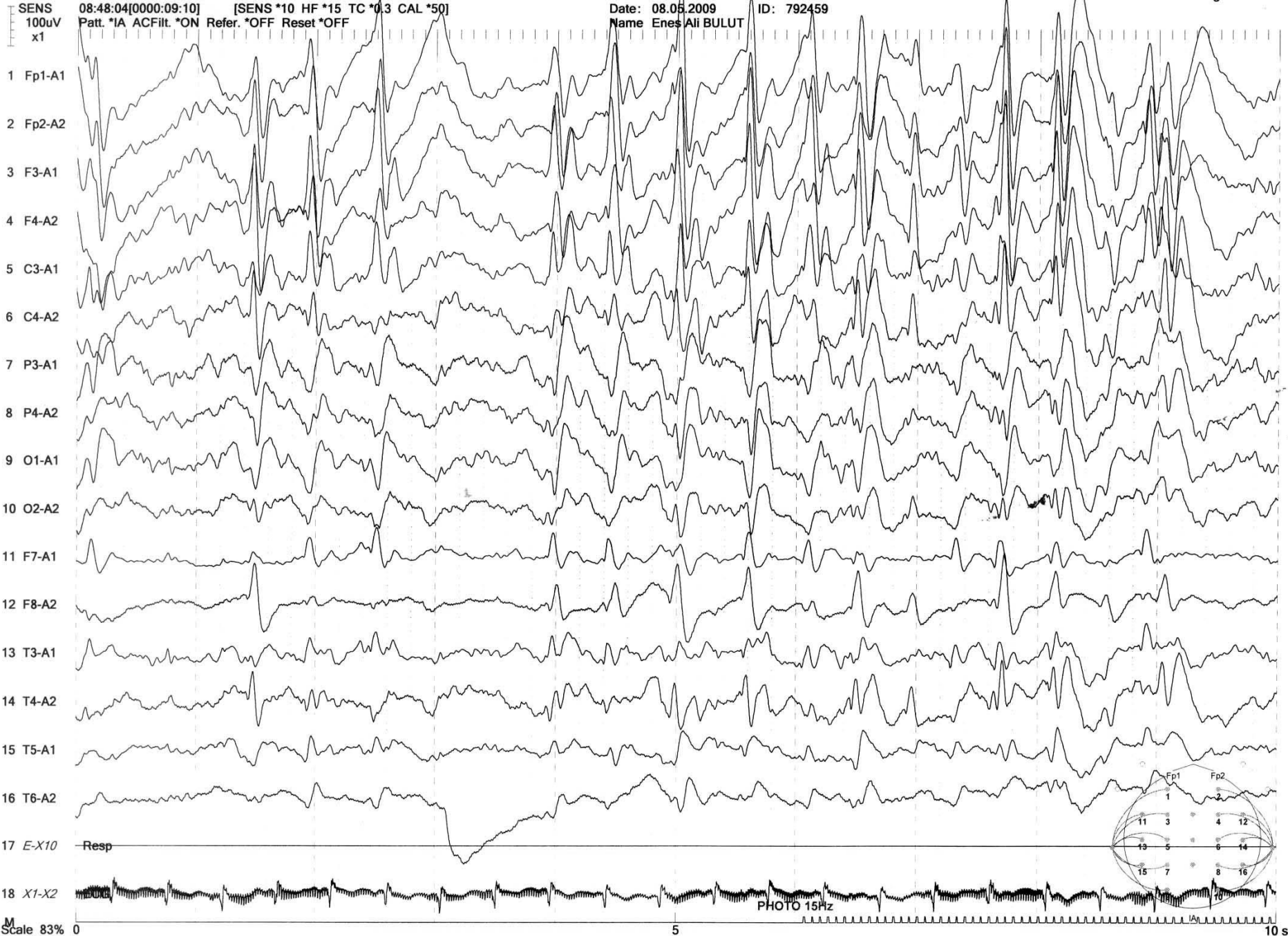


Yavaş Uykuda Elektriksel Status (ESES)

- Devamlı bilateral yaygın 1.5-2.5 Hz yavaş diken dalga
- Uyku trasesinin % 50-100 ünü oluşturmaktadır.
- Unilateral, fokal,asimetrik olabilir.
- REM uykusunda epileptik aktivite parçalar halinde (fragmentasyon), uyanıklık EEG'sinde bulunan bulgulara benzer gözlenir.

Yavaş Uykuda Elektriksel Status (ESES)





SENS 08:47:55[0000:09:01] [SENS *10 HF *15 TC *0.3 CAL *50]
100uV
x1
Patt. *IIIA ACfilt. *ON Refer. *OFF Reset *OFF

Date: 08.05.2009 ID: 792459
Name Enes Ali BULUT

1 Fp1-F3
2 F3-C3
3 C3-P3
4 P3-O1
5 Fp2-F4
6 F4-C4
7 C4-P4
8 P4-O2
9 Fp1-F7
10 F7-T3
11 T3-T5
12 T5-O1
13 Fp2-F8
14 F8-T4
15 T4-T6
16 T6-O2

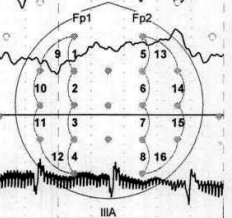
17 E-X10 -Resp

18 X1-X2 EEG

M
Scale 83% 0

5

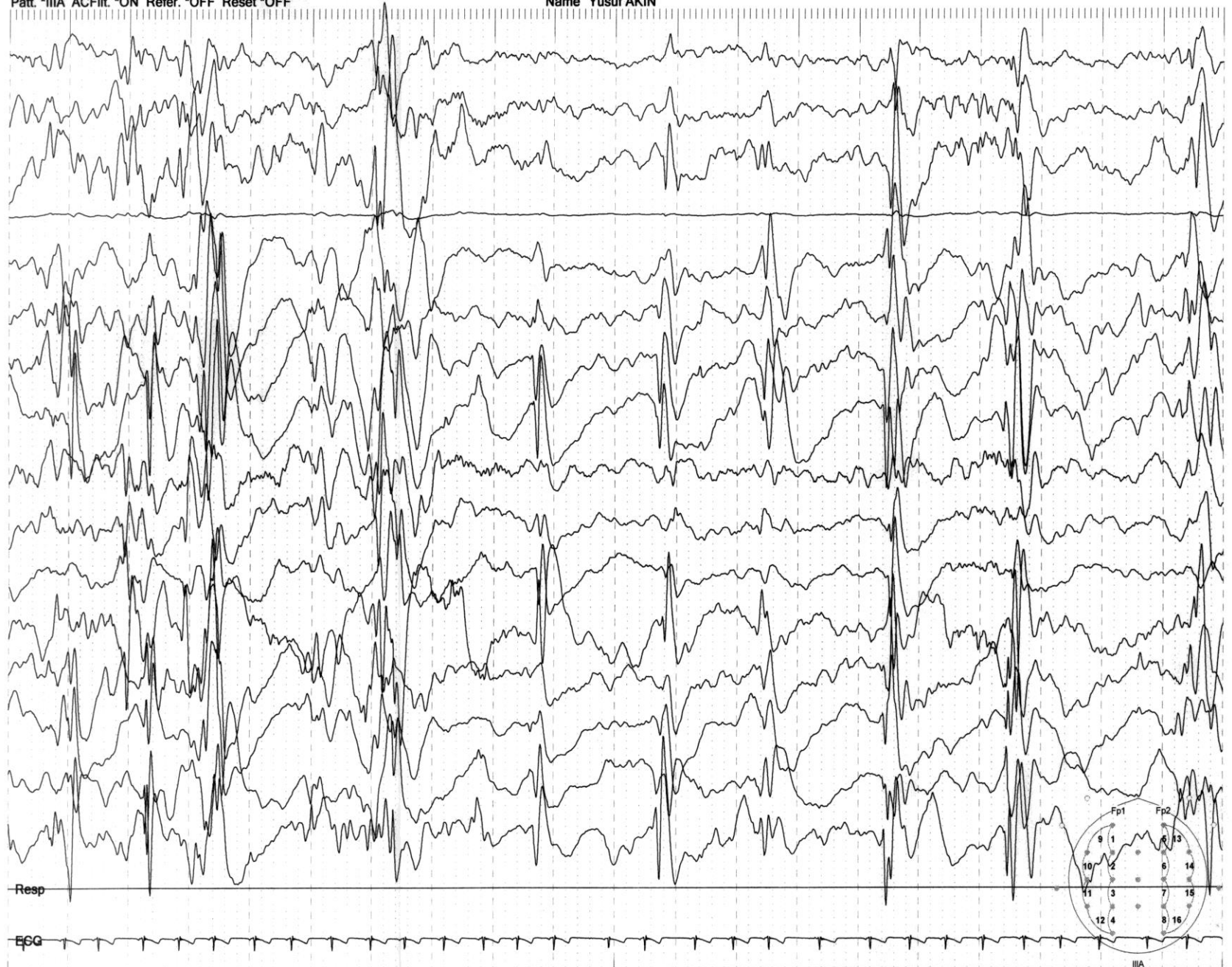
10 s



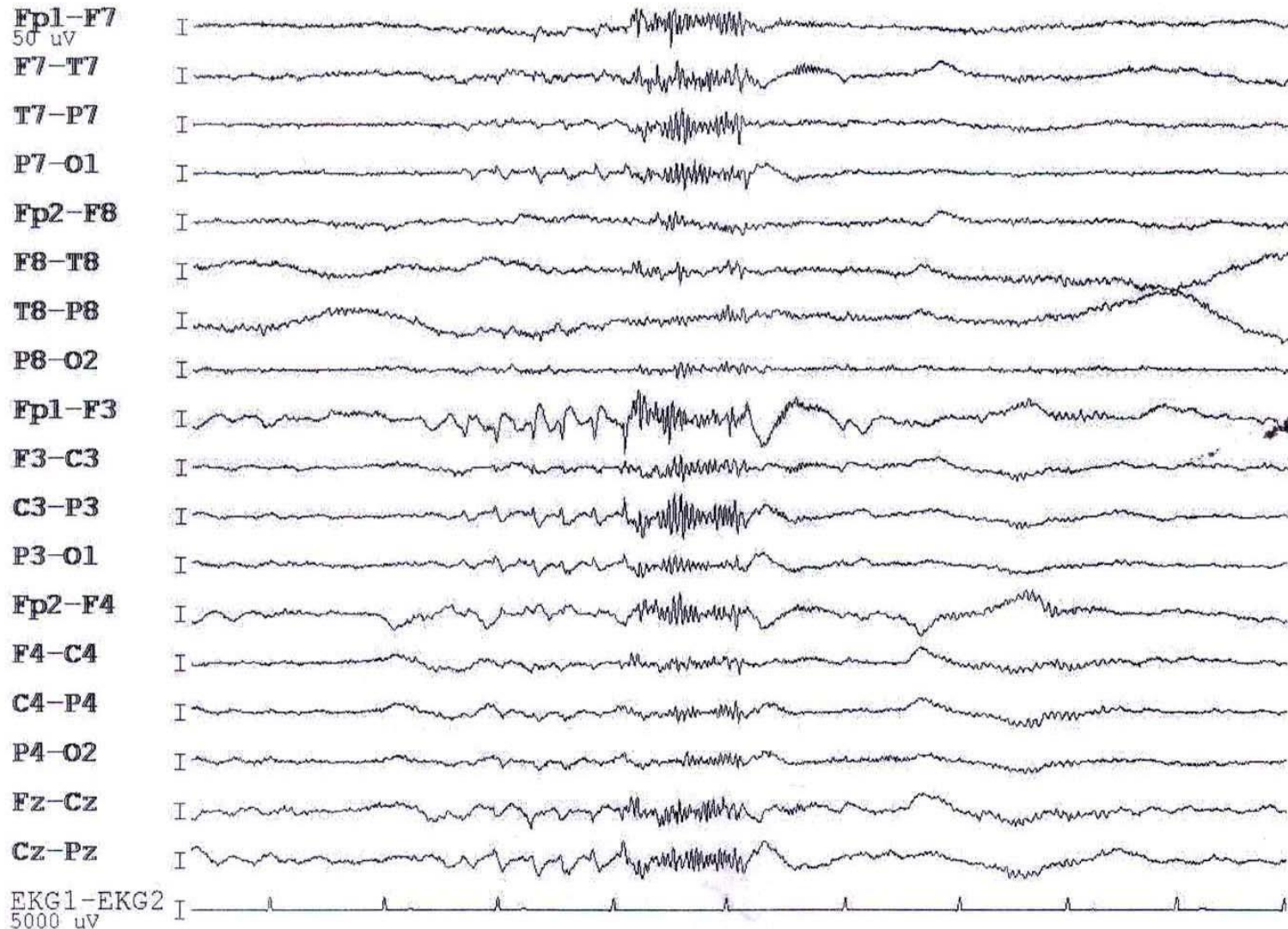
SENS 08:20:27[0000:04:00] [SENS *15 HF *15 TC *0.3 CAL *50]
150uV Patt. *IIIA ACFilt. *ON Refer. *OFF Reset *OFF
x1

Date: 10.11.2005 ID: 652673
Name Yusuf AKIN

- 1 Fp1-F3
- 2 F3-C3
- 3 C3-P3
- 4 P3-O1
- 5 Fp2-F4
- 6 F4-C4
- 7 C4-P4
- 8 P4-O2
- 9 Fp1-F7
- 10 F7-T3
- 11 T3-T5
- 12 T5-O1
- 13 Fp2-F8
- 14 F8-T4
- 15 T4-T6
- 16 T6-O2
- 17 E-X10 -Resp
- 18 X1-X2 -EGG

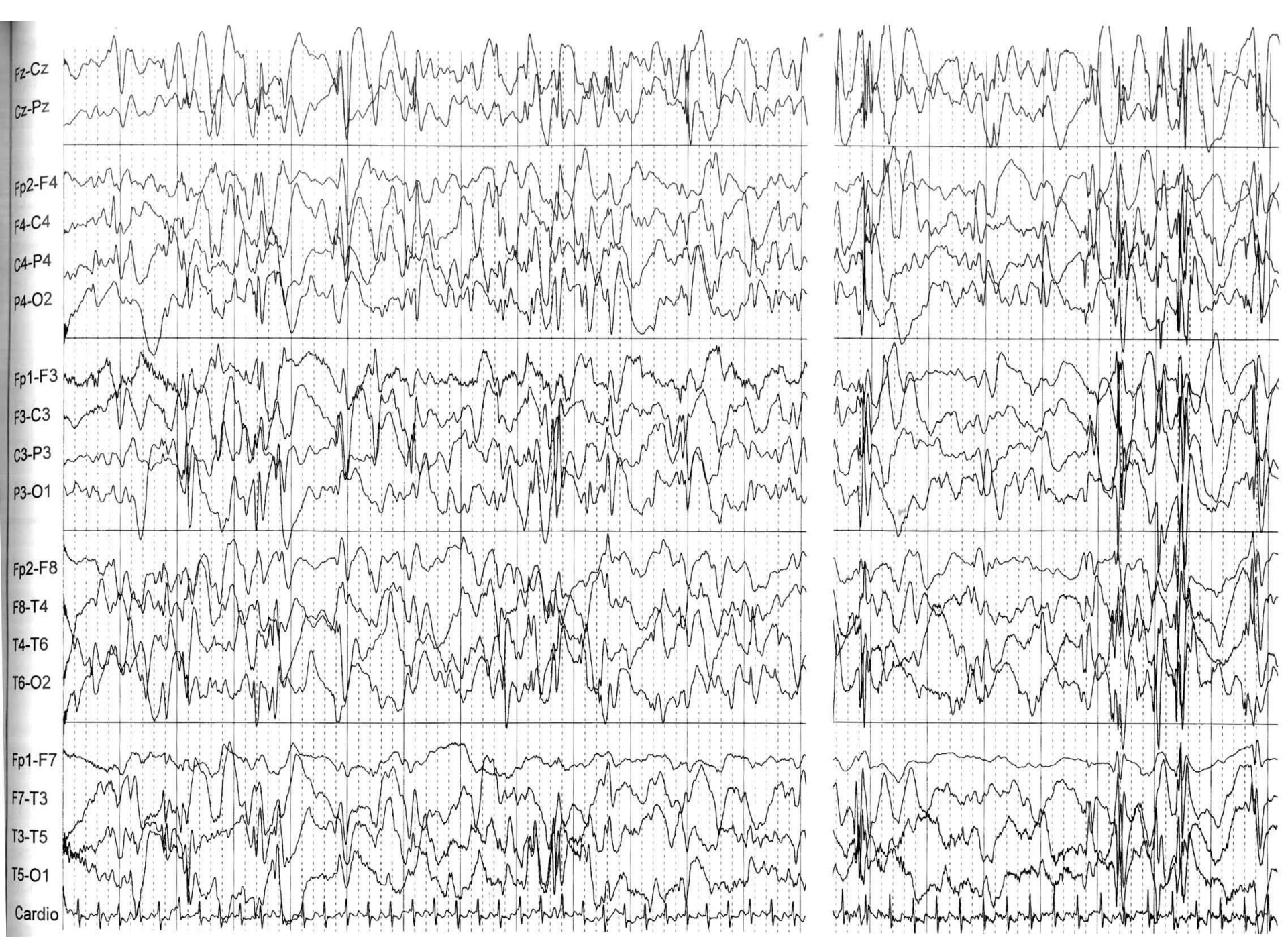


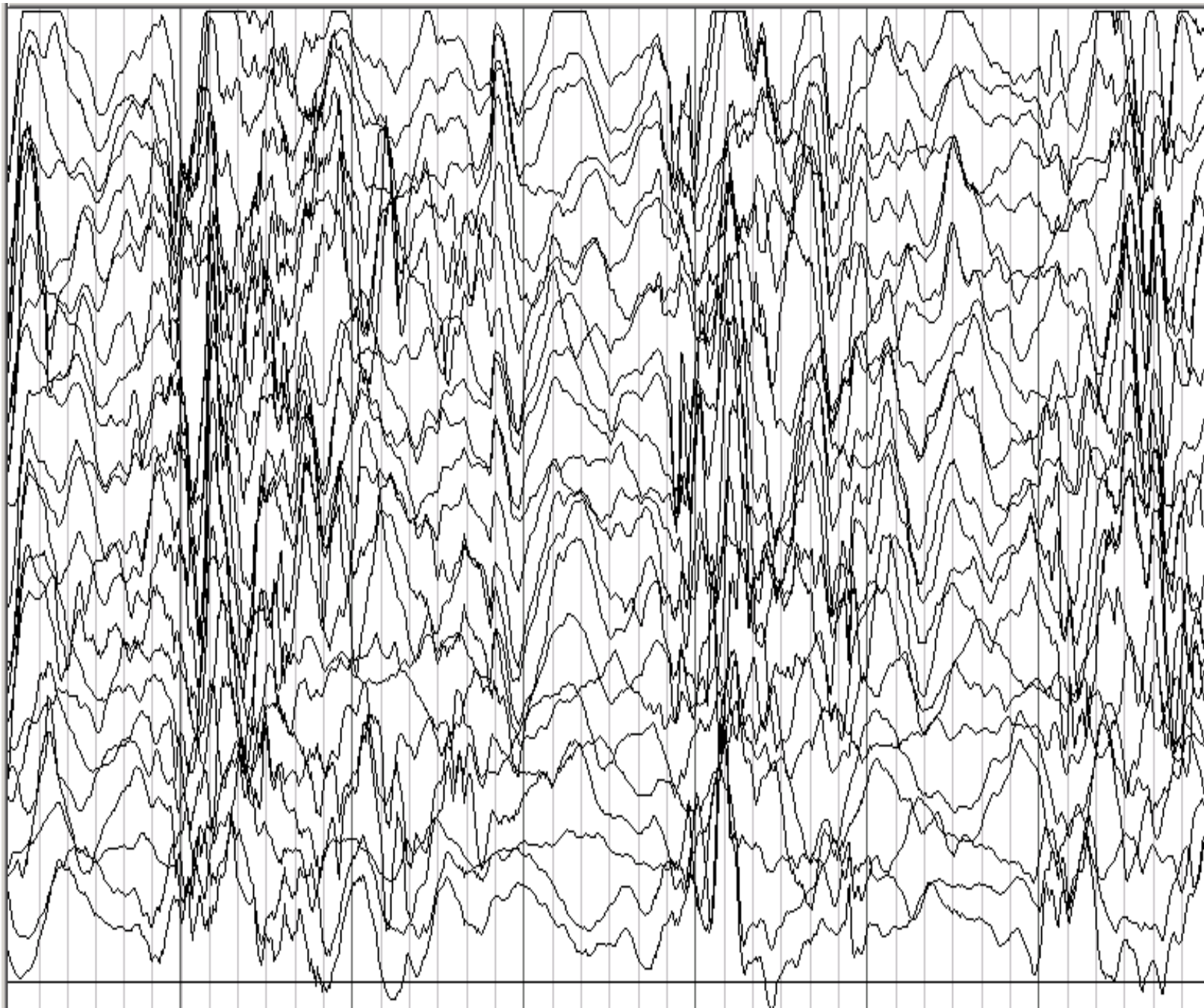
Secondary bilateral synchrony



Hipsaritmi

- Jeneralize 200-300 μ V yavaş dalga boşalmaları
- Yavaş dalgalara karışan yer ve süre değişiklikleri gösteren diken dalgalar
- Kaotik disorganizasyon (uyanıklıkta devamlı, uykuda parçalı)





Fp2 - Cz

F4 - Cz

F8 - Cz

C4 - Cz

T4 - Cz

T6 - Cz

P4 - Cz

O2 - Cz

Fp1 - Cz

F3 - Cz

F7 - Cz

C3 - Cz

T3 - Cz

T5 - Cz

P3 - Cz

O1 - Cz

Fz - Cz

Pz - Cz

F8 - T4

T4 - T6

F8 - T6

F7 - T3

T3 - T5

F7 - T5

Photo

Jeneralize Periodik Dalgalar

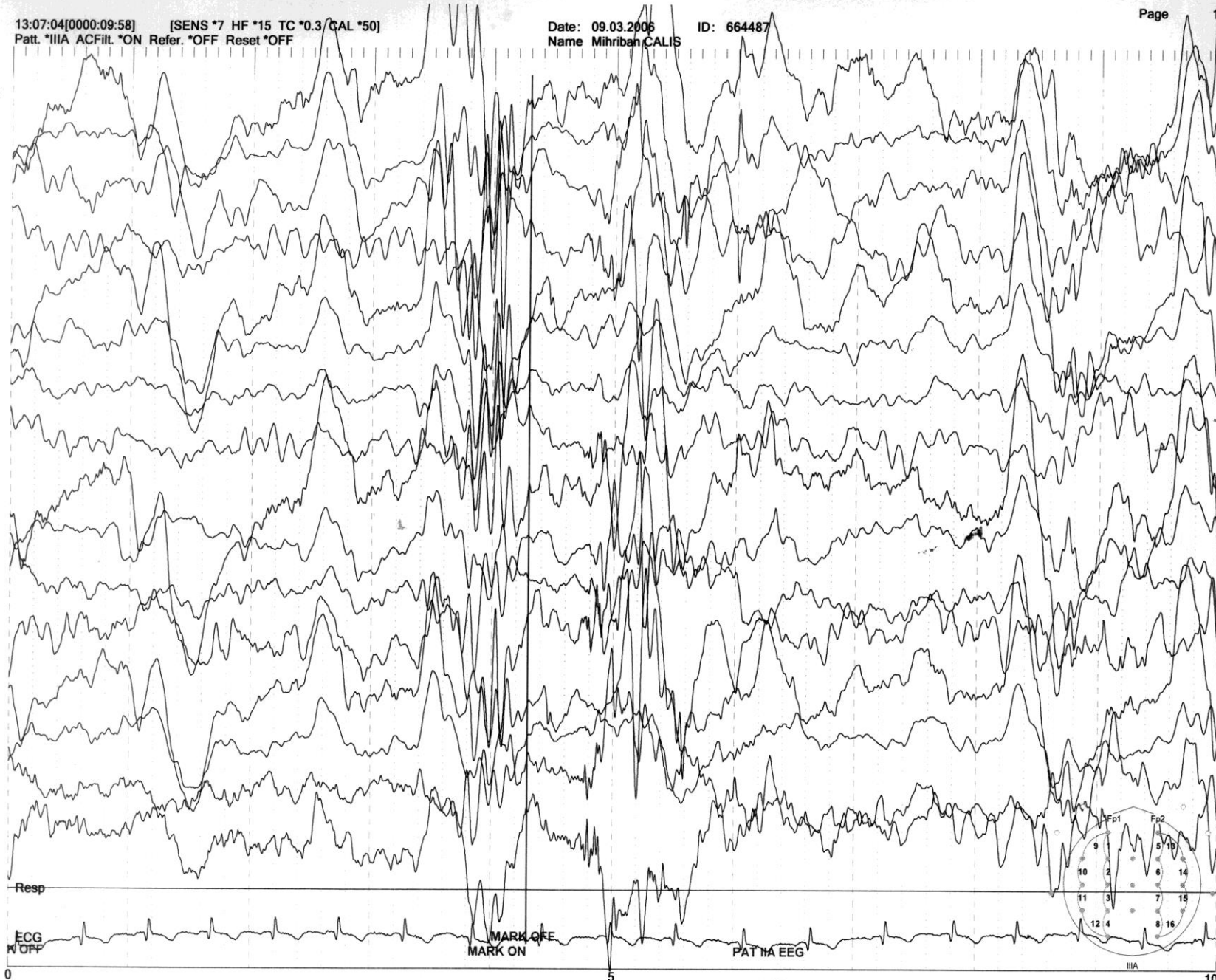
- Anoksi
- SSPE
- Status
- CJH



1 Fp1-F3
2 F3-C3
3 C3-P3
4 P3-O1
5 Fp2-F4
6 F4-C4
7 C4-P4
8 P4-O2
9 Fp1-F7
10 F7-T3
11 T3-T5
12 T5-O1
13 Fp2-F8
14 F8-T4
15 T4-T6
16 T6-O2
17 E-X10

18 X1-X2

Scale 83% 0



SENS
100uV
x1

13:06:44[0000:09:37] [SENS *10 HF *15 TC *0.3 CAL *50]
Patt. *IA ACFilt. *ON Refer. *OFF Reset *OFF

Date: 09.03.2006 ID: 664487
Name Mihriban CALIS

Page

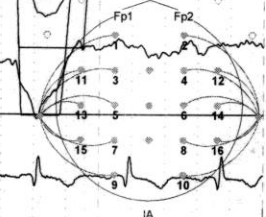
1

1 Fp1-A1
2 Fp2-A2
3 F3-A1
4 F4-A2
5 C3-A1
6 C4-A2
7 P3-A1
8 P4-A2
9 O1-A1
10 O2-A2
11 F7-A1
12 F8-A2
13 T3-A1
14 T4-A2
15 T5-A1
16 T6-A2
17 E-X10 Resp
18 X1-X2 ECG

M
Scale 83% 0

MARK OFF
MARK ON

MARK OFF
MARK ON



5

10 s

SENS 70uV x1
14:45:20[0000:00:37] [SENS *7 HF *15 TC *0.3 CAL *50]
Patt. *IIIA ACfilt. *ON Refer. *OFF Reset *OFF

Date: 06.12.2006 ID: 773261
Name Kubra KACAR

1 Fp1-F3

2 F3-C3

3 C3-P3

4 P3-O1

5 Fp2-F4

6 F4-C4

7 C4-P4

8 P4-O2

9 Fp1-F7

10 F7-T3

11 T3-T5

12 T5-O1

13 Fp2-F8

14 F8-T4

15 T4-T6

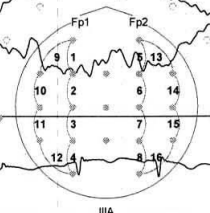
16 T6-O2

17 E-X10 Resp

18 X1-X2 ECG

M Scale 83% 0

5

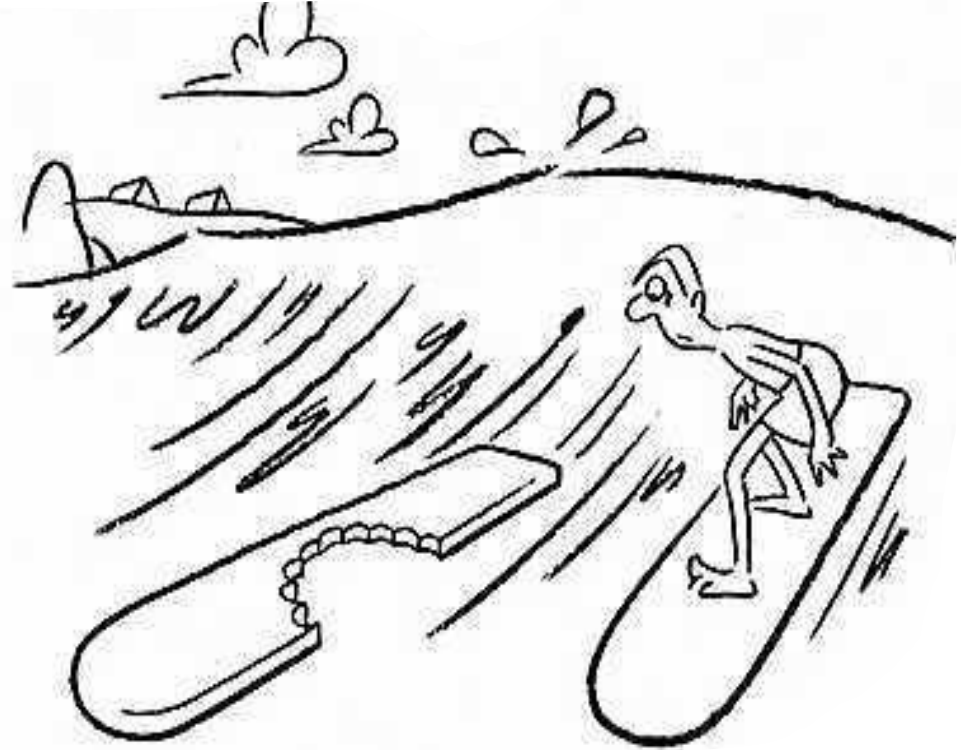
MARK OFF
MARK ON

10 s



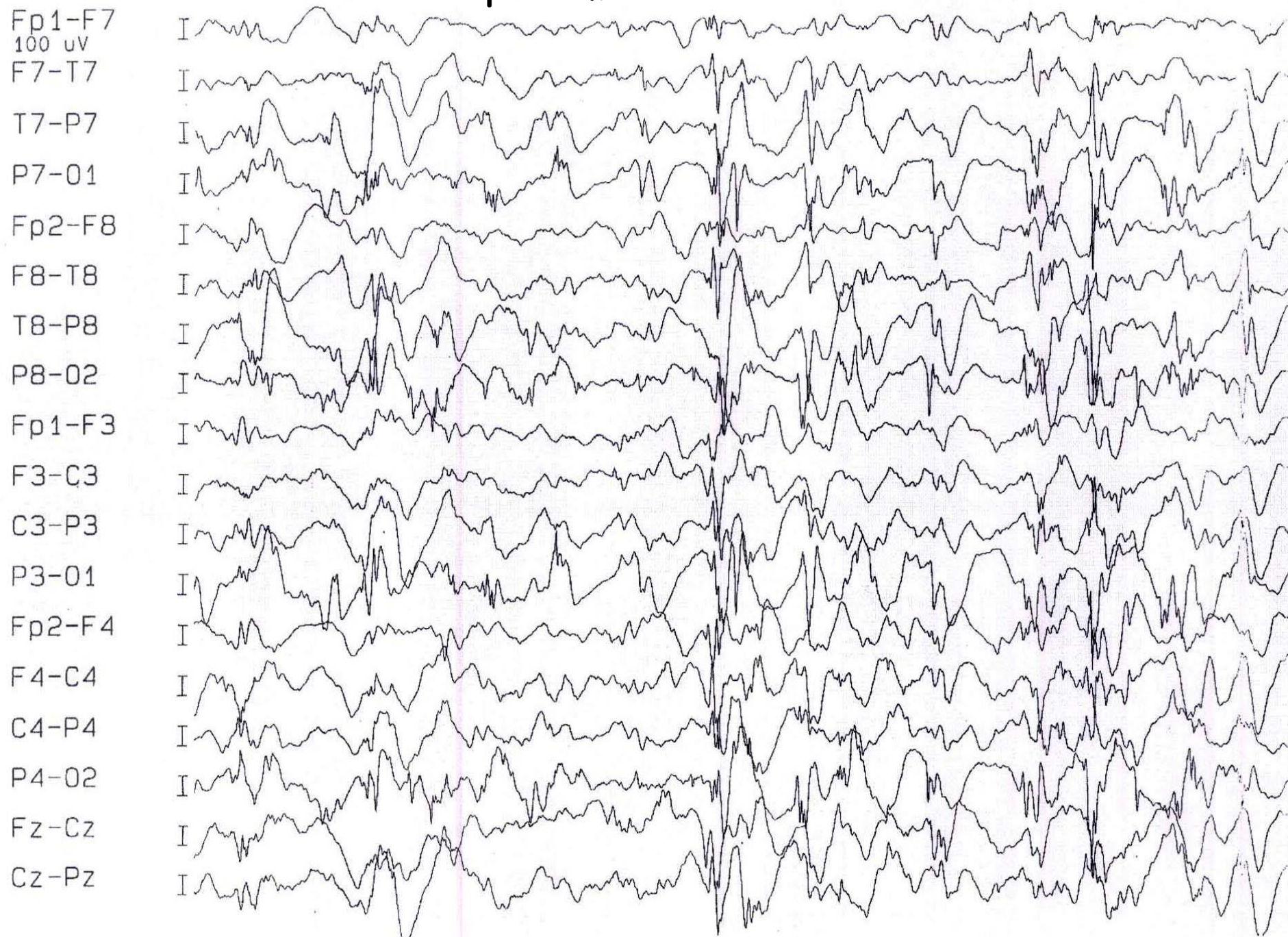
Jeneralize İnteriktal EEG Anomalileri

- Dağılım
- Görünüş



"bite" &
wave

Hipsaritmi



2 F3-C3

3 C3-P3

4 P3-O1

5 Fp2-F4

6 F4-C4

7 C4-P4

8 P4-O2

9 Fp1-F7

10 F7-T3

11 T3-T5

12 T5-O1

13 Fp2-F8

14 F8-T4

15 T4-T6

16 T6-O2

17 0V-X1

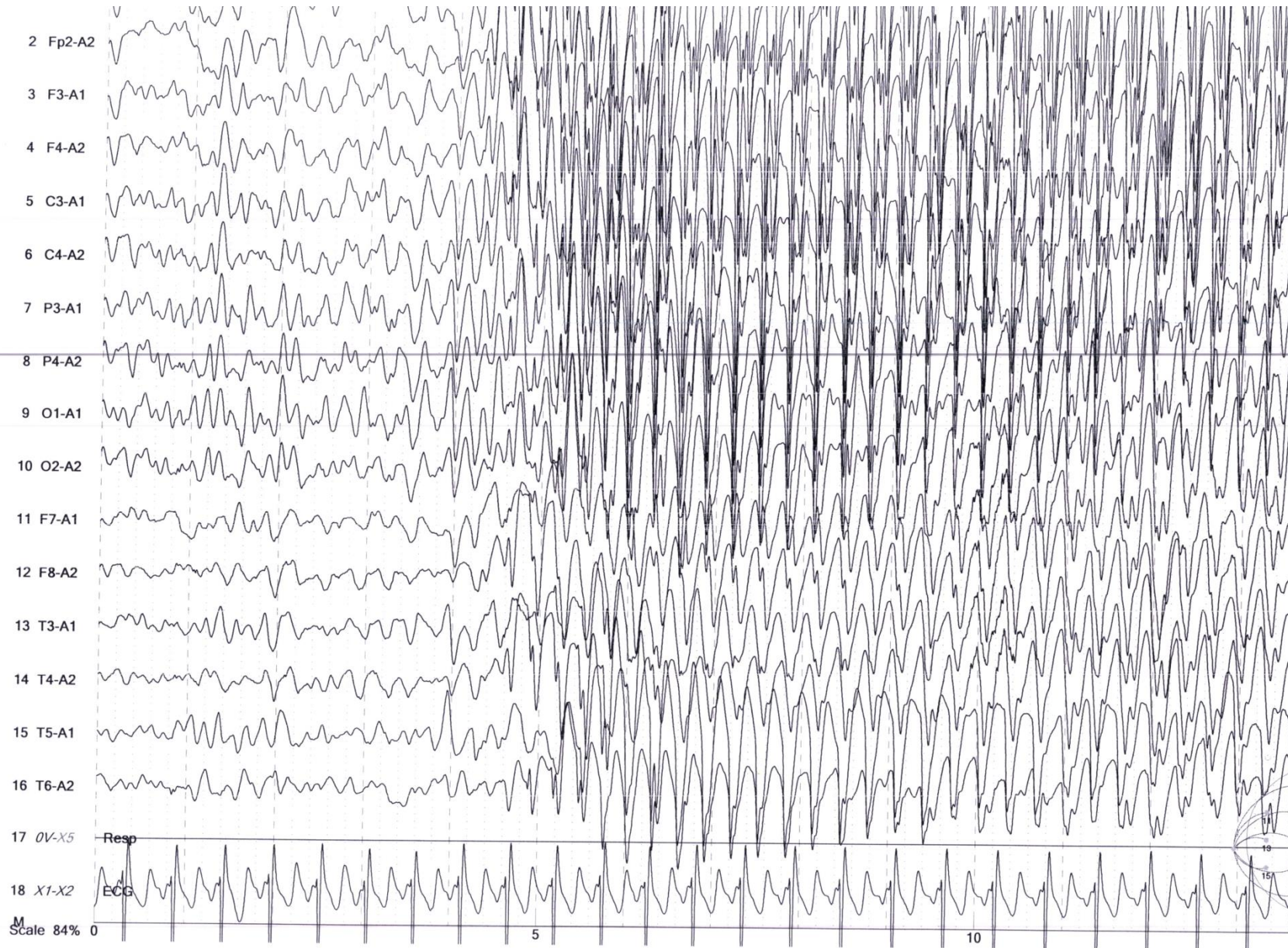
ECG

Scale 84% 0

5

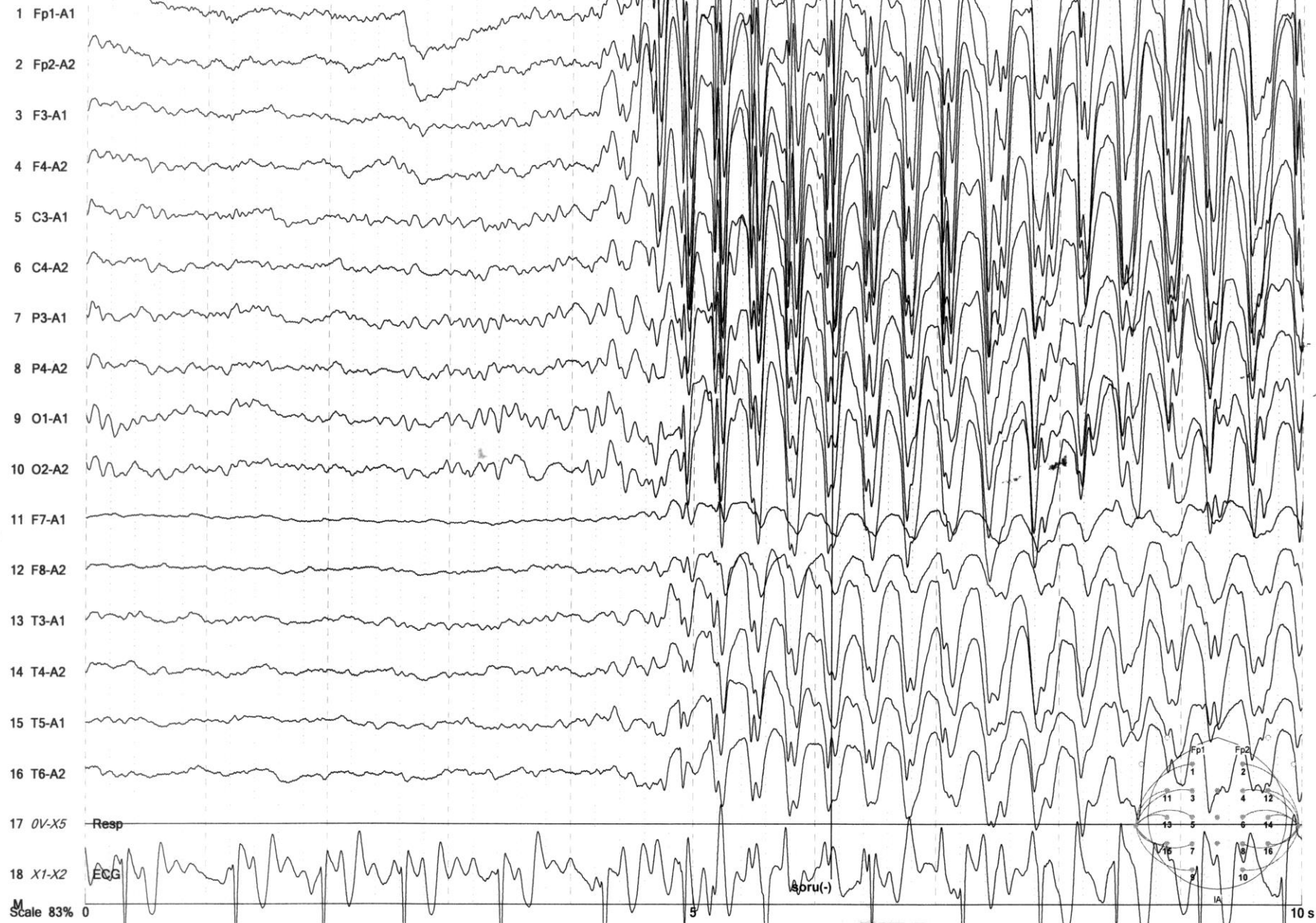
10

9
10
11
12



SENS 150uV
x1
15:32:49[0000:14:42] [SENS *15 HF *15 TC *0.3 CAL *50]
Patt. IA ACFilt. *ON Refer. OFF Reset *OFF

Date: 07.05.2009 ID: 961239
Name: Yasepin KANMAZ

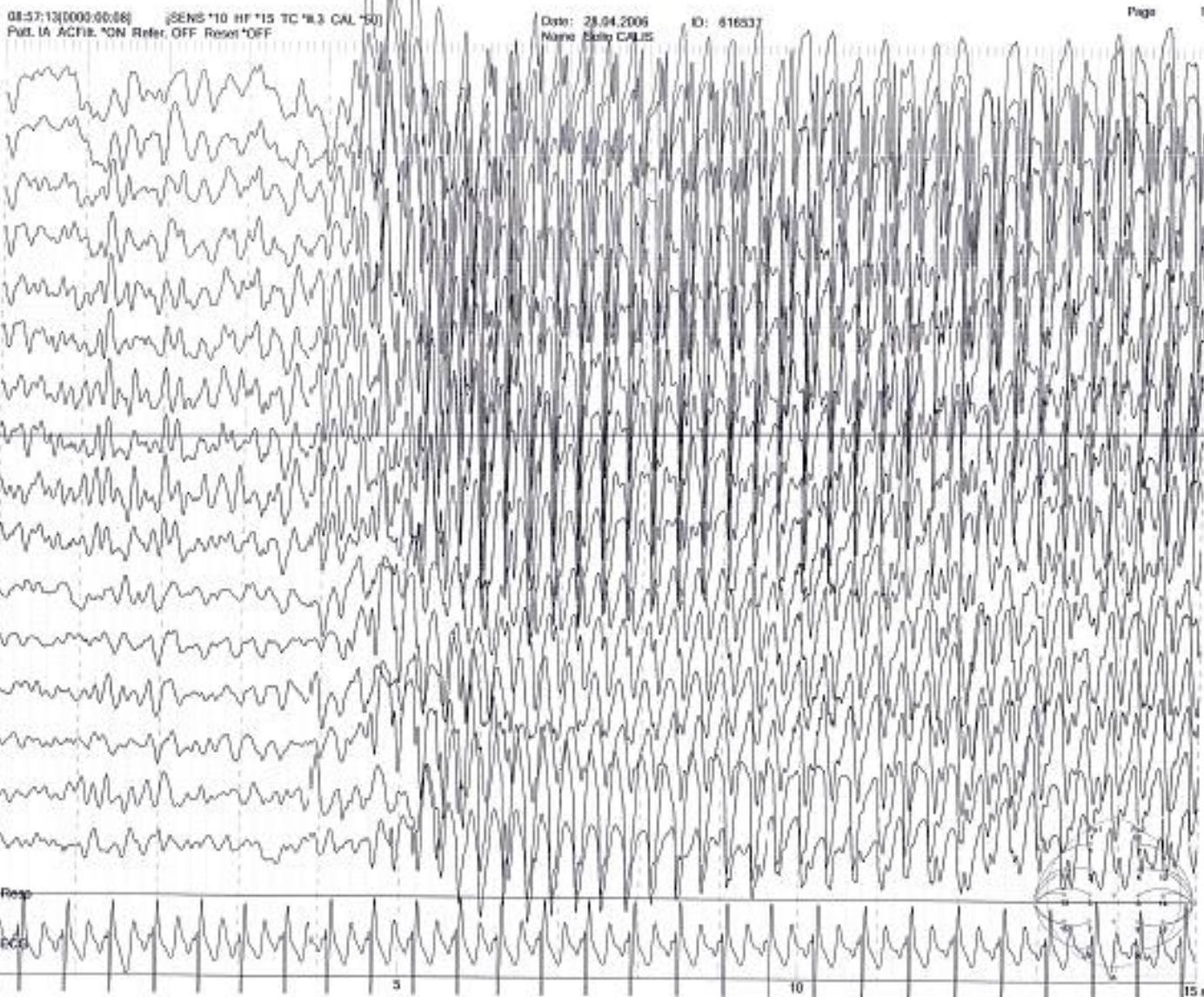


SENS 08:57:13(0000:00:00) SENS *10 HF *15 TC *R.3 CAL *50
100uV Pul. IA AC118 *ON Refer. OFF Reset *OFF
x1

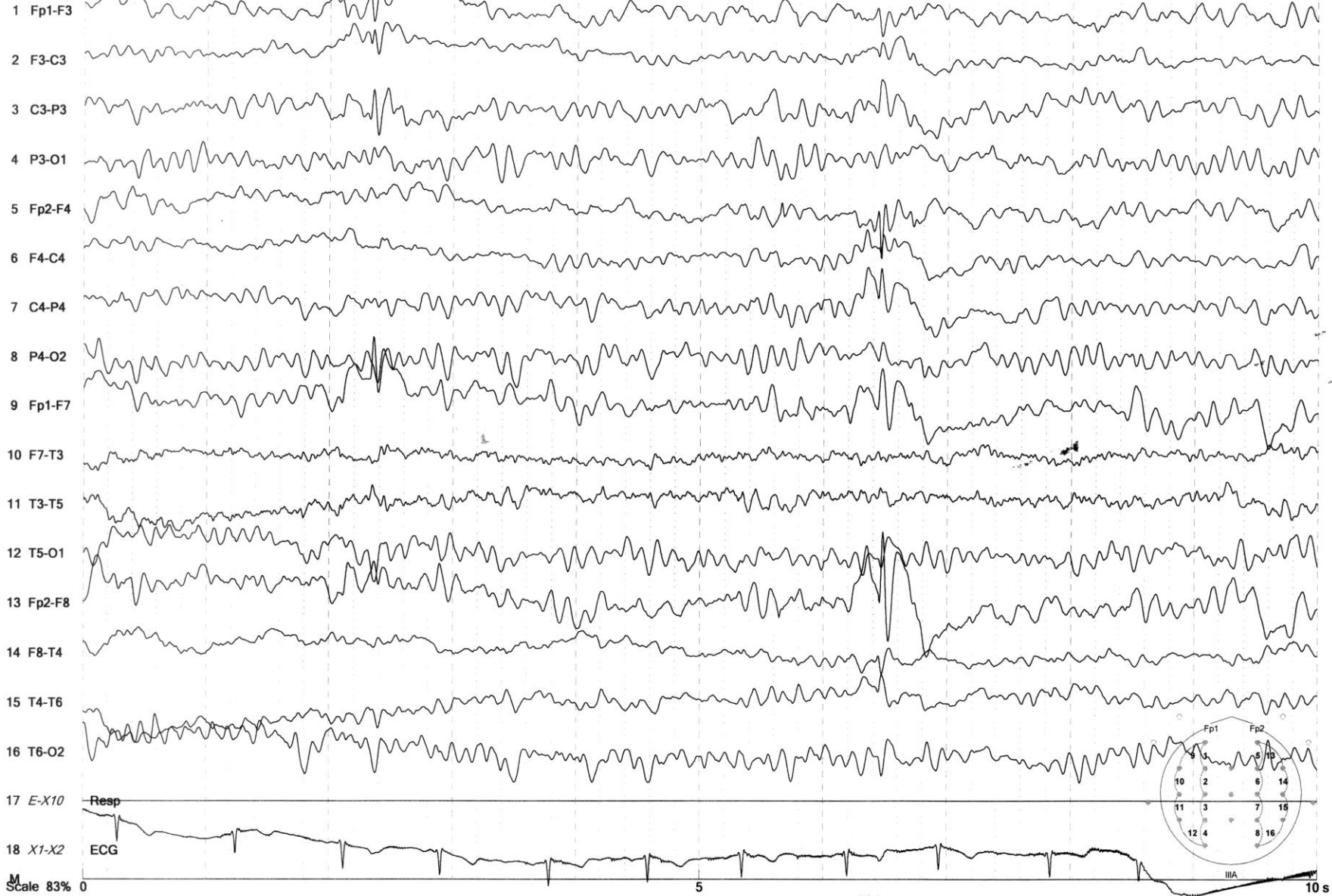
Date: 28.04.2006 ID: 816537
Name: Baby CALUS

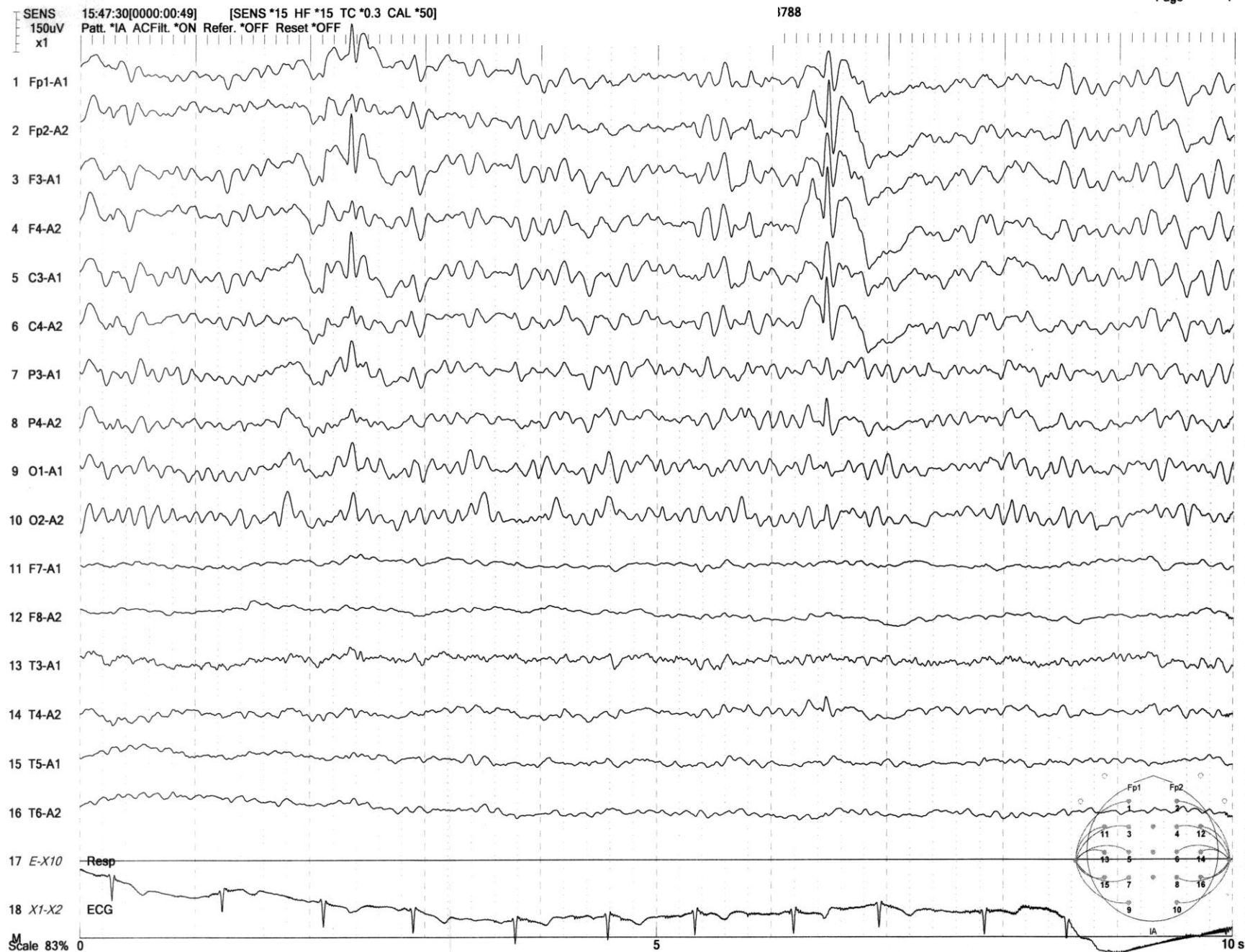
- 1 Fp1-A1
- 2 Fp2-A2
- 3 F3-A1
- 4 F4-A2
- 5 C3-A1
- 6 C4-A2
- 7 F3-A1
- 8 F4-A2
- 9 O1-A1
- 10 O2-A2
- 11 F7-A1
- 12 F8-A2
- 13 T3-A1
- 14 T4-A2
- 15 T5-A1
- 16 T6-A2
- 17 OV-A2 -Resp
- 18 X1-X2 -ECG

Scale 84% 0



SENS 15:47:30[0000:00:49] [SENS *10 HF *15 TC *0.3 CAL *50]
 100uV Patt. *IIIA ACfilt. *ON Refer. *OFF Reset *OFF
 x1





SENS 150uV x1
15:56:03[0000:09:22] [SENS *15 HF *15 TC *0.3 CAL *50]
Patt. *IIIA ACFilt. *ON Refer. *OFF Reset *OFF

1 Fp1-F3

2 F3-C3

3 C3-P3

4 P3-O1

5 Fp2-F4

6 F4-C4

7 C4-P4

8 P4-O2

9 Fp1-F7

10 F7-T3

11 T3-T5

12 T5-O1

13 Fp2-F8

14 F8-T4

15 T4-T6

16 T6-O2

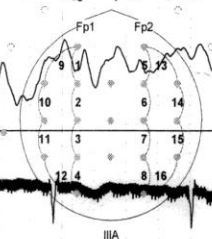
17 E-X10 Resp

18 X1-X2 ECG

M Scale 83%

soru(+)

5



10 s

SENS 10:23:30[0000:18:24] [SENS *7 HF *70 TC *0.1 CAL *50]
70uV
x1
Patt. *IIIA ACFilt. *ON Refer. *OFF Reset *OFF

1 Fp1-F3

2 F3-C3

3 C3-P3

4 P3-O1

5 Fp2-F4

6 F4-C4

7 C4-P4

8 P4-O2

9 Fp1-F7

10 F7-T3

11 T3-T5

12 T5-O1

13 Fp2-F8

14 F8-T4

15 T4-T6

16 T6-O2

18 0V.X1



M Scale 83% 0

