



Making Full Use of Orchestral Colors in Interactive Music

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Color

solo ad lib

Bassoon

Oboe

Warm, prominent, "Oboey"

Thin & clear

Ineffective & thin

Heavy, hard to play quietly

Bassoon

Sweet, expressive

Thin, intense

Pinched

Dark, sonorous, hard to play quietly



Combining Instruments

2 Flutes

Oboe

Cor Anglais

2 Clarinets in Bb

2 Bassoons

Harp

Violin I

Violin II

Viola

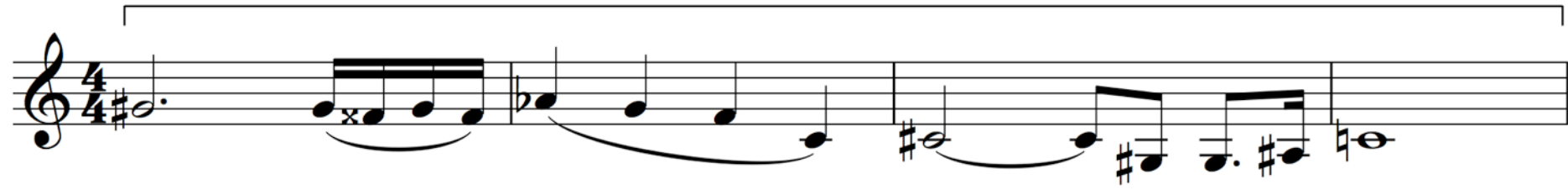
Violoncello

Contrabass

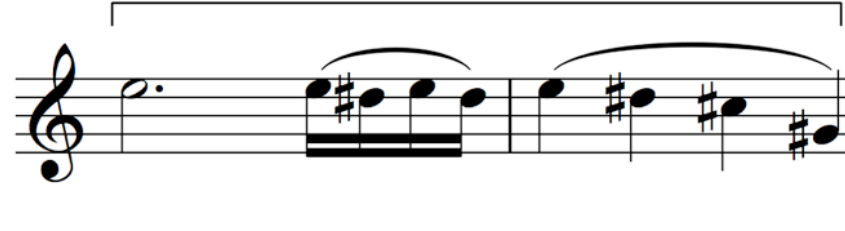


Combining Instruments


Vln II, Vla, Cor Anglais, 2 Clarinets



Vln I & II, 2 Flutes, Oboe



Vla, Cor Anglais, 2 Clarinets

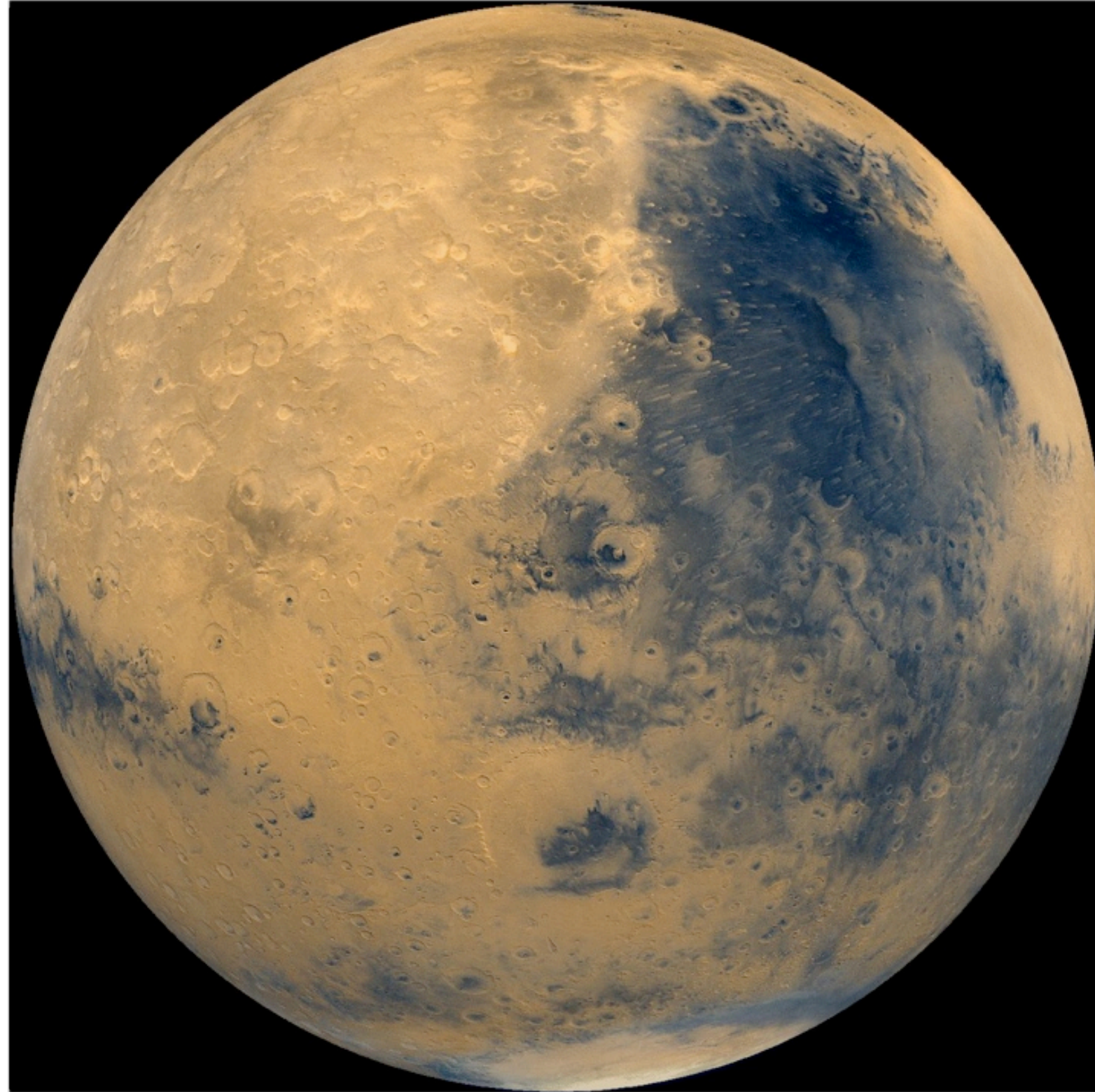




Combining Instruments

“Color is very important...
to orchestrate is like a thumbprint.”

Bernard Herrmann





String Ostinato

The musical score is for a string ensemble and consists of five staves: Violin I, Violin II, Viola, Violoncello, and Contrabass. The key signature is one flat (B-flat) and the time signature is 5/4. The score is divided into six measures. Each measure begins with the instruction "col legno" and a dynamic marking of *p* (piano). The notation shows a series of eighth notes, with some measures featuring triplets or specific fingering numbers (2, 3, 4, 5, 6) above the notes. The Viola, Violoncello, and Contrabass parts include horizontal lines under the notes in measures 4 and 5, likely indicating bowing techniques. The Violin I part has a triplet of eighth notes in measure 4. The Violin II part has a triplet of eighth notes in measure 4. The Viola part has a triplet of eighth notes in measure 4. The Violoncello part has a triplet of eighth notes in measure 4. The Contrabass part has a triplet of eighth notes in measure 4.



Opening Melodic Statement

2 3 4 5 6

Bass Oboe

3 Bassoons

Contrabassoon

Horn in F 4.5.6

I II a2

p

mp

VVI a2

p

mp



Opening Melodic Statement Horns Only

2 3 4 5 6

Bass Oboe

3 Bassoons

Contrabassoon

Horn in F 4.5.6

VVI a2

p *mp*

The musical score is for a 5/4 time signature. The first three staves (Bass Oboe, 3 Bassoons, and Contrabassoon) are marked with a '2' above the first measure and a '3' above the second measure, indicating a 2-measure rest followed by a 3-measure rest. The fourth staff (Horn in F 4.5.6) begins with a rest in the first measure, followed by a melodic line starting in the second measure. The melodic line consists of a half note (F2), a dotted half note (G2), a half note (A2), a dotted half note (Bb2), a half note (C3), a dotted half note (D3), a half note (E3), and a dotted half note (F3). The dynamics are marked *p* (piano) for the first half note and *mp* (mezzo-piano) for the rest of the phrase. The phrase is marked with a slur and a breath mark. The notation includes a key signature of one flat (Bb) and a time signature of 5/4.



Opening Melodic Statement Woodwinds Only

The musical score is for the opening melodic statement of woodwinds only, featuring four staves: Bass Oboe, 3 Bassoons, Contrabassoon, and Horn in F. The key signature is one flat (B-flat) and the time signature is 5/4. The score is divided into six measures, numbered 2 through 6 at the top. Measures 2 and 3 are marked with a '2' and '3' respectively. Measures 4, 5, and 6 are marked with a '4', '5', and '6' respectively. The Bass Oboe staff has a treble clef and a key signature of one flat. The 3 Bassoons and Contrabassoon staves have a bass clef and a key signature of one flat. The Horn in F staff has a treble clef and a key signature of one flat. The Bass Oboe staff has a rest in measure 2. The 3 Bassoons and Contrabassoon staves have a rest in measure 2. The Horn in F staff has a rest in measure 2. In measure 3, the Bass Oboe staff has a rest. The 3 Bassoons and Contrabassoon staves have a melodic line starting on a half note, marked with a *p* dynamic. The Horn in F staff has a rest. In measure 4, the Bass Oboe staff has a rest. The 3 Bassoons and Contrabassoon staves have a melodic line continuing from measure 3, marked with a *p* dynamic. The Horn in F staff has a rest. In measure 5, the Bass Oboe staff has a melodic line starting on a half note, marked with a *mp* dynamic. The 3 Bassoons and Contrabassoon staves have a melodic line continuing from measure 4, marked with a *mp* dynamic. The Horn in F staff has a rest. In measure 6, the Bass Oboe staff has a rest. The 3 Bassoons and Contrabassoon staves have a melodic line continuing from measure 5, marked with a *mp* dynamic. The Horn in F staff has a rest. The score includes various musical notations such as rests, notes, and dynamics.

Bass Oboe
 3 Bassoons
 Contrabassoon
 Horn in F 4.5.6
 6 Timpani (2 players)
 Gong
 Harp 1 & 2
 Violin I
 Violin II
 Viola
 Violoncello
 Contrabass



Opening Melodic Statement Stems by Family

MELODY - DOUBLE REEDS

MELODY - HORNS

OSTINATO - PERCUSSION

OSTINATO - STRINGS

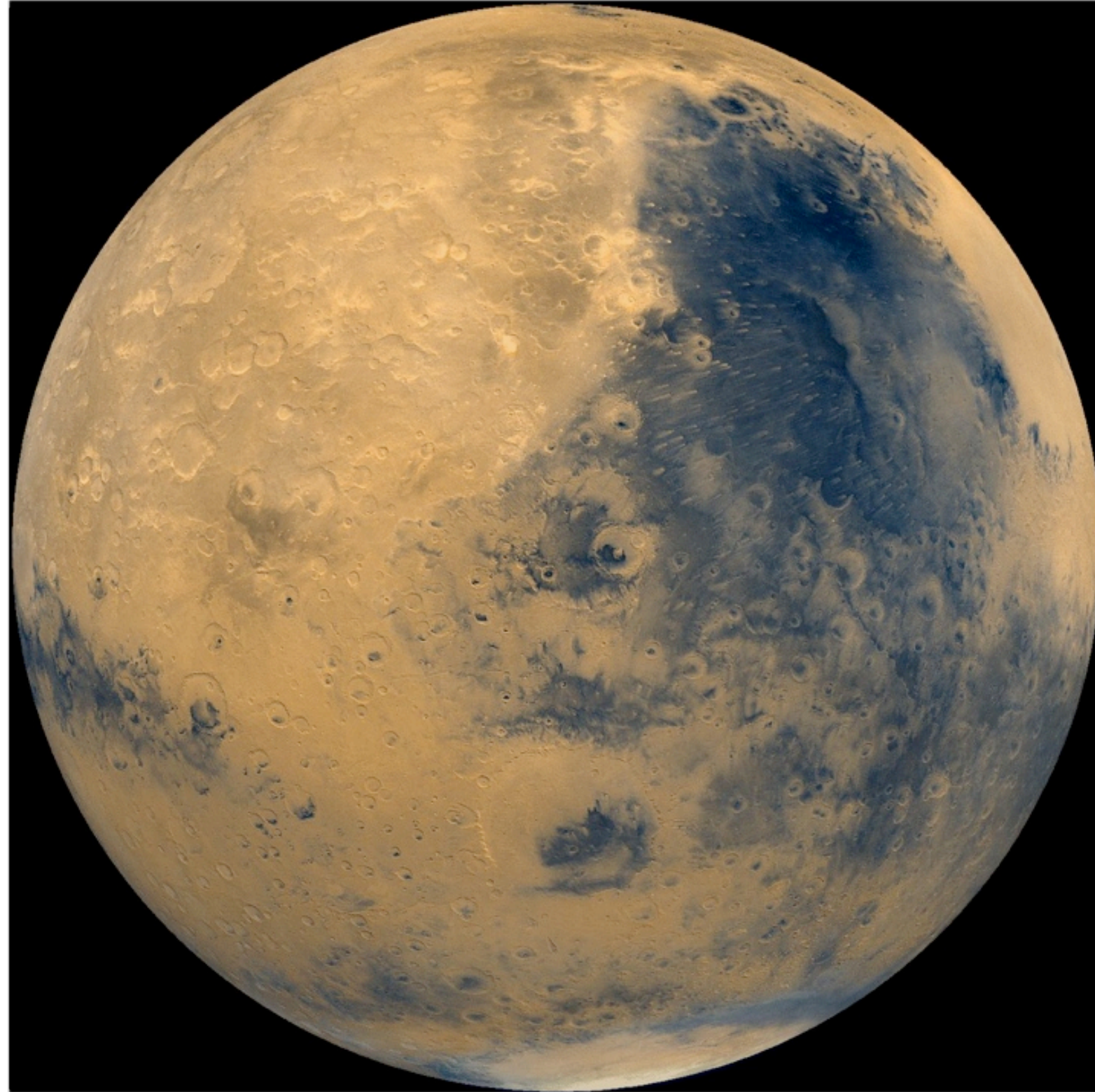


Opening Melodic Statement Combined Wind & Brass Stem

MELODY - DOUBLE REEDS & BRASS

OSTINATO - PERCUSSION

OSTINATO - STRINGS





27 28 29 30 31 32 33

Fl. *mf* *f* *f* *f* *f* *f* *f*

Ob. *mf* *f* *f* *f* *f* *f* *f*

C. A. *mf* *f* *f* *f* *f* *f* *f*

Cl. *mf* *f* *f* *f* *f* *f* *f*

B. Cl. *f* *f* *f* *f* *f* *f* *f*

Cbsn. *f* *f* *f* *f* *f* *f* *f*

6 Hn. *f* *f* *f* *f* *f* *f* *f*

4 C Tpt. *mf* *f* *mf* *f* *mf* *f* *mf*

3 Tbn. *mf* *f* *mf* *f* *mf* *f* *mf*

Euph. *mf* *f* *mf* *f* *mf* *f* *mf*

Tba. *mf* *f* *mf* *f* *mf* *f* *mf*

Timp. *f* *f* *f* *f* *f* *f* *f*

Gong *f* *f* *f* *f* *f* *f* *f*

Vln. I *mf* *f* *f* *f* *f* *f* *f*

Vln. II *f* *f* *f* *f* *f* *f* *f*

Vla. *f* *f* *f* *f* *f* *f* *f*

Vc. *f* *f* *f* *f* *f* *f* *f*

Cb. *f* *f* *f* *f* *f* *f* *f*

tutti, naturale

tutti, naturale



Violin I (Vln. I) part: Measures 27-33. Measure 28 starts with *mf*, measure 29 with *f*, and measures 30-33 with *f*. The staff shows a melodic line with a flat in measures 28, 30, 32, and 33.

Violin II (Vln. II) part: Measures 27-33. All measures contain triplets of eighth notes. Measure 29 starts with *f*, and measures 30-33 continue with *f*.

Viola (Vla.) part: Measures 27-33. All measures contain triplets of eighth notes. Measure 29 starts with *f*, and measures 30-33 continue with *f*.

Violoncello (Vc.) part: Measures 27-33. Measures 27-28 are marked "(the other half naturale)". Measures 29-33 are marked "tutti, naturale". All measures contain triplets of eighth notes. Measure 29 starts with *f*, and measures 30-33 continue with *f*.

Contrabasso (Cb.) part: Measures 27-33. Measures 27-28 are marked "(the other half naturale)". Measures 29-33 are marked "tutti, naturale". All measures contain triplets of eighth notes. Measure 29 starts with *f*, and measures 30-33 continue with *f*.



27 28 29 30 31 32 33

Fl. *mf* *f* *f* *f* *f* *f* *f*

Ob. *mf* *f* *f* *f* *f* *f* *f*

C. A. *mf* *f* *f* *f* *f* *f* *f*

Cl. *mf* *f* *f* *f* *f* *f* *f*

B. Cl. *f* *f* *f* *f* *f* *f* *f*

Cbsn. *f* *f* *f* *f* *f* *f* *f*

6 Hn. *f* *f* *f* *f* *f* *f* *f*

4 C Tpt. *mf* *f* *mf* *f* *mf* *f* *mf*

3 Tbn. *mf* *f* *mf* *f* *mf* *f* *mf*

Euph. *mf* *f* *mf* *f* *mf* *f* *mf*

Tba. *mf* *f* *mf* *f* *mf* *f* *mf*

Timp. *f* *f* *f* *f* *f* *f* *f*

Gong *f* *f* *f* *f* *f* *f* *f*

Vln. I *f* *f* *f* *f* *f* *f* *f*

Vln. II *f* *f* *f* *f* *f* *f* *f*

Vla. *f* *f* *f* *f* *f* *f* *f*

Vc. *f* *f* *f* *f* *f* *f* *f*

Cb. *f* *f* *f* *f* *f* *f* *f*

tutti, naturale

tutti, naturale

1

15 16 17 18

Vln. I

Vln. II

Vla.

Vc.

Cb.

p

only half

p 3

3



23 24 25 26

Vln. I

Vln. II

Vla.

Vc.

Cb.

mf

naturale
3

mf cresc.

naturale
3

the other half naturale

*mf*³

the other half naturale

*mf*³



WOODWINDS

BRASS

PERCUSSION

STRINGS



WOODWINDS & VIOLIN I

BRASS

PERCUSSION

VIOLIN II, VIOLA, 'CELLI & BASSES



OSTINATO MOTION

MELODY

SWEETENER

The image shows a page of a musical score, likely for piano and strings. The score is written in 4/4 time and consists of several systems of staves. The first system includes staves for violin and viola (vln & vla), cello and double bass (cel. & bs), and piano (p). The second system includes staves for violin I (vln I), violin II (vln II), and piano (p). The third system includes staves for violin II (vln II), viola (vla), and piano (p). The fourth system includes staves for violin II (vln II), viola (vla), and piano (p). The fifth system includes staves for violin II (vln II), viola (vla), and piano (p). The score is marked with various dynamics (p, mf, f, cresc., decresc., mp, dim., non dir.) and articulations (accents, slurs). There are also some handwritten annotations in blue and red ink, including circled areas and markings like "1" and "2".



2

36 37 38 39 40 41 42 43 44

Hn. 1.2.3. *ff* *sempre cresc.* *fff*

Hn. 4.5.6. *ff* *sempre cresc.* *fff*

C Tpt. 1.2. *ff* *sempre cresc.* *fff*

C Tpt. 3.4. *f* *ff* *sempre cresc.* *fff*

2 Tbn. *p cresc.* *fff*

B. Tbn. *p cresc.* *fff*

Euph. *ff* *sempre cresc.* *fff*

Tba. *p cresc.* *fff*



The image displays a page from a musical score, likely for a video game soundtrack, featuring various instruments and vocal parts. The score is annotated with several hand-drawn shapes:

- Blue Annotations:** A large blue oval encircles the top section of the score, including the Flute (Fl.), Oboe (Ob.), Clarinet in A (C. A.), Clarinet in Bb (Cl.), Bassoon (B. Cl.), and Contrabass (Cbn.) staves. Another blue oval highlights the Horns (Hr.) and Trumpets (Tpt.) staves. A third blue oval is drawn around the Euphonium (Euph.) and Trombones (Tbn.) staves. A fourth blue oval highlights the Percussion (Perc.) staff.
- Red Annotations:** A red oval highlights the Bassoon (B. Cl.) staff. Another red oval highlights the Percussion (Perc.) staff.
- Black Annotations:** A large black oval encircles the bottom section of the score, including the Violins (Vln. I, Vln. II), Viola (Via.), Vocals (Vo.), and Chorus (Ch.) staves. Another black oval highlights the Violins (Vln. I, Vln. II) staves.

The score includes various musical notations such as notes, rests, and dynamic markings (e.g., *mf*, *f*, *cresc.*, *decresc.*). The instruments listed on the left side of the score are: Fl., Ob., C. A., Cl., B. Cl., Cbn., Hr., Tpt., Tbn., B. Tbn., Euph., Perc., Vln. I, Vln. II, Via., Vo., and Ch.



RECORDING





38 39 40 41

ff *sempre cresc.*
a3

ff *sempre cresc.*

sempre cresc.

sempre cresc.

p *cresc.*

p *cresc.*

ff *sempre cresc.*

p *cresc.*

fff

fff

fff

fff
a2

fff
a2

fff
a2

fff
a2

fff



Parts Requirements

- Easy to Rehearse
- Obvious when to play
- Legible parts



THE PLANETS

1. Mars, the bringer of war

Gustav Holst
(1874-1934)
4 Op. 32

Contrabass

Allegro
Play in Pass A Only

col legno3

col legno3

1 2 3 3 4 Op. 32

p

5 6 7 8

9 10 11 12

cresc.

13 14 15 16

mf dim.

1 only half 17 18 19 20

p *mp*

21 22 23 24

25 26 27 28

the other half naturale

mf

tutti, naturale

Contrabass

[illegible]



THE PLANETS

Violin I

1. Mars, the bringer of war

Gustav Holst
(1874-1934)
Op. 32

Allegro

col legno Play in Pass A[illegible]

9 10 11 12

3 3 3 3

cresc.

Measures 13-16 of the piece. The notation shows a treble clef and a key signature of one flat (B-flat). The melody consists of eighth notes. Measure 13 starts with a treble clef and a key signature of one flat. Measures 14, 15, and 16 continue the melody. The dynamic marking *mf dim.* is placed below measure 14. The tempo marking *Allegretto* is at the end of the staff.

17 18 19 20

3 3 3 3

p *mp*

The musical score for measures 17-20 of 'The Rose Tree' is shown. It features a treble clef and a key signature of one flat (B-flat). The melody consists of eighth notes, with measures 17 and 19 marked with a piano (*p*) dynamic and measures 18 and 20 marked with a mezzo-piano (*mp*) dynamic. The tempo is indicated as 'Allegretto'.

Measures 21-24 of the piece. The notation shows a continuous melodic line in the treble clef. Measures 21, 22, and 23 each contain a triplet of eighth notes. Measure 24 contains a triplet of eighth notes followed by a quarter note. The piece concludes with a *mf* (mezzo-forte) dynamic marking.

[illegible]

Violin I

31 32 33 34

31 32 33 34

f *f* *f* *cresc.*

The musical notation shows four measures of music. Measure 31 starts with a treble clef and a forte (*f*) dynamic. It contains a half note G4, a half note A4, and a half note B4, all beamed together. Measure 32 contains a half note B4, a half note C5, and a half note D5, all beamed together. Measure 33 contains a half note D5, a half note E5, and a half note F5, all beamed together. Measure 34 contains a half note F5, a half note G5, and a half note A5, all beamed together. The dynamics are *f* for measures 31, 32, and 33, and *f cresc.* for measure 34. The key signature has one sharp (F#).

35 36 37 38 39

sempre cresc.

2

40 Play in Pass A 41 42 43

fff 3 3 3 3

44 45 46 47

3 3 3 3

56 57 58

3

58



Trumpet in C 3

THE PLANETS

1. Mars, the bringer of war

Gustav Holst
(1874-1934)
Op. 32

Allegro

11

12 5 17 1 6

23 24 Play in Pass B 25 26 2

p *mf*

28 Play in Pass C 29 30 31

mf *f* *mf* *f*

32 33 34 Play in Pass B

mf *f* *mf* *f* *f cresc.*

36 37 38 39

ff *sempre cresc.*

40 2 41 42

fff

Trumpet in C 3

43 Play in Pass A 44 45 46

47 48 49 50

51 Play in Pass C 53 Play in Pass A 54

fff *ff*

55 56 57 58 3

fff



Violoncello

8 - Chapter Two Underscore: Base & Active Layers

Book of Spells

Allegro sforzando ♩=125

Joe Thwaites

Violoncello score for measures 4-36. The score is in 3/4 time with a key signature of one sharp (F#). It includes various dynamics (mp, mf), articulations (pizz., arco), and layer instructions (Play in Base Layer Only, Play in Active Layer Only). A green highlight is present under measures 30-33.

Measures 4-8: **4** *mp* *pizz.* *Play in Base Layer Only*

Measures 11-14: **2** *mp* *Play in Base Layer Only* **A**

Measures 15-18: *mp*

Measures 19-22: *mp*

Measures 23-26: *mp* **2**

Measures 29-32: *mp* *arco* *Play in Active Layer Only* **B** *Play in Base Layer Only* *Play in Active Layer Only*

Measures 33-36: *mp* *pizz.* *Play in Base Layer Only* *Play in Active Layer Only* **33** **34** **35** **36**

Violoncello

Violoncello score for measures 37-97. The score is in 3/4 time with a key signature of one sharp (F#). It includes various dynamics (mp, mf), articulations (pizz., arco), and layer instructions (Play in Base Layer Only, Play in Active Layer Only). A green highlight is present under measures 30-33.

Measures 37-42: *mp* *pizz.* *Play in Base Layer Only* **37** **3** **41** **42**

Measures 48-49: *mp* *Play in Base Layer Only* **3** **2** **C** **48** **49**

Measures 50-53: *mp*

Measures 54-59: *mp* *Play in Base Layer Only* **54** **55** **2** **D** **58** **59**

Measures 60-63: *mp*

Measures 64-67: *mp*

Measures 68-71: *mp*

Measures 72-73: *mp* *Play in Active Layer Only* **72** **73**

Measures 74-83: *mp* **2** **8** **E**

Measures 84-91: *mp* *arco* *Play in Active Layer Only* **84** **85** **86** **87** **88** **89** **90** **91**

Measures 94-97: *mf* *Play in Base Layer Only* **2** **F** **94** **95** **96** **97**



Violin I

THE PLANETS
1. Mars, the bringer of war

Gustav Holst
(1874-1934)
Op. 32

Allegro
col legno

Measures 1-30: Violin I part, featuring triplet eighth notes and dynamic markings (p, mf, cresc., mf dim.).

Violin I

Measures 31-39: Violin I part, featuring slurs, triplets, and dynamic markings (f, f cresc., sempre cresc.).

Measures 40-47: Violin I part, featuring triplets and dynamic markings (fff).

Measures 48-51: Violin I part, featuring triplets and dynamic markings.

Measures 52-58: Violin I part, featuring slurs, triplets, and dynamic markings (mf, f).



Violoncello

8 - Chapter Two Underscore: Base & Active Layers

Book of Spells

Joe Thwaites

Allegro sforzando $\text{♩} = 125$

pizz. 5 6 7 8

4

2 A 11 12 13 14

15 16 17 18

19 20 21 22

23 24 25 26 2

B arco 29 30 pizz. 31 arco 32

mp

33 34 pizz. 35 arco 36

Violoncello

37 pizz. 41 42

3

3 2 C 48 49

mp

50 51 52 53

54 55 2 D 58 59

mp

60 61 62 63

64 65 66 67

68 69 70 71

72 73 2 E 8

arco 84 85 86 87 88 89 90 91

mp

2 F 94 95 96 97

mf

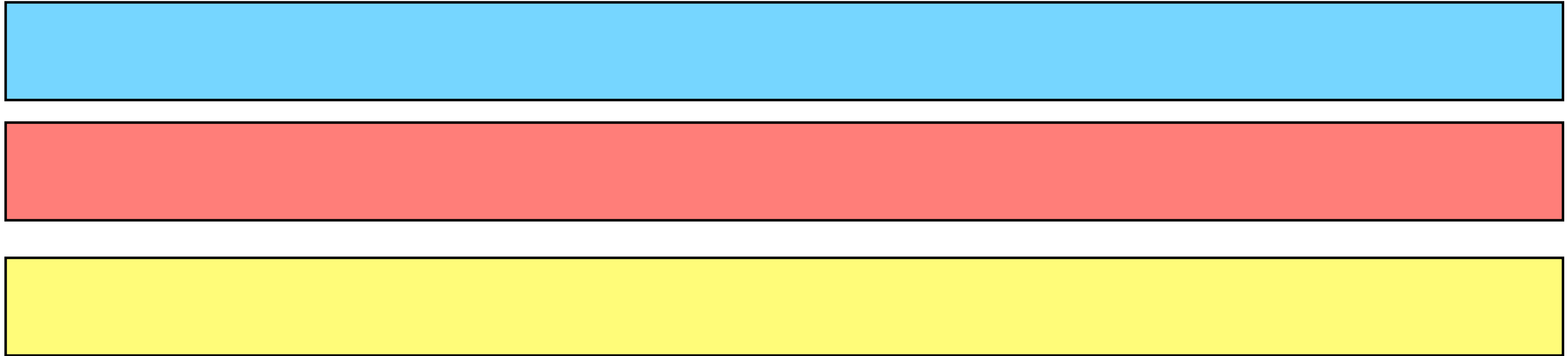


MIXING



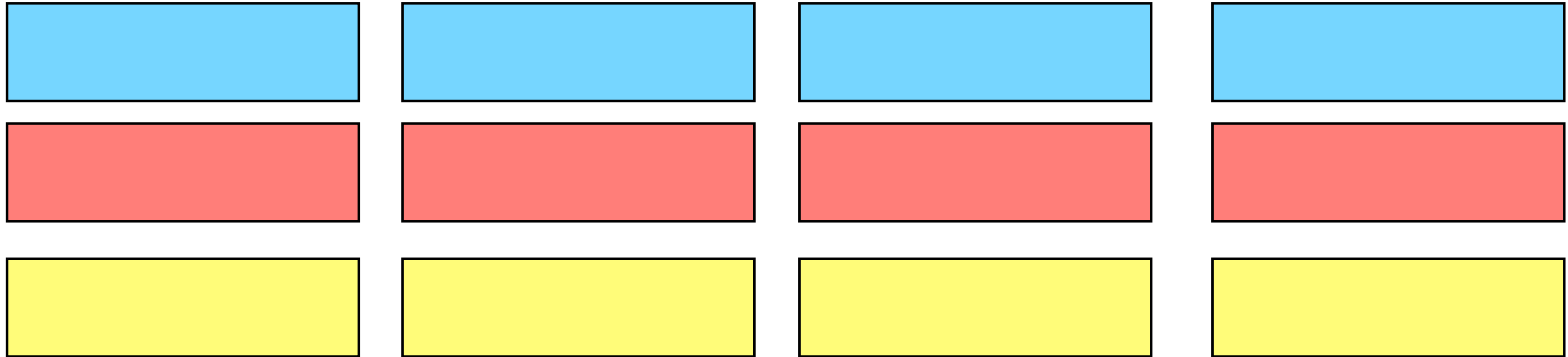


Vertical Layers & Horizontal Chunks



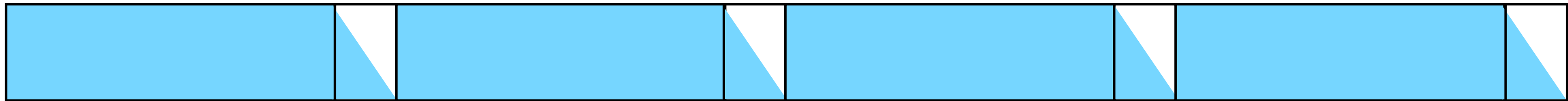


Vertical Layers & Horizontal Chunks



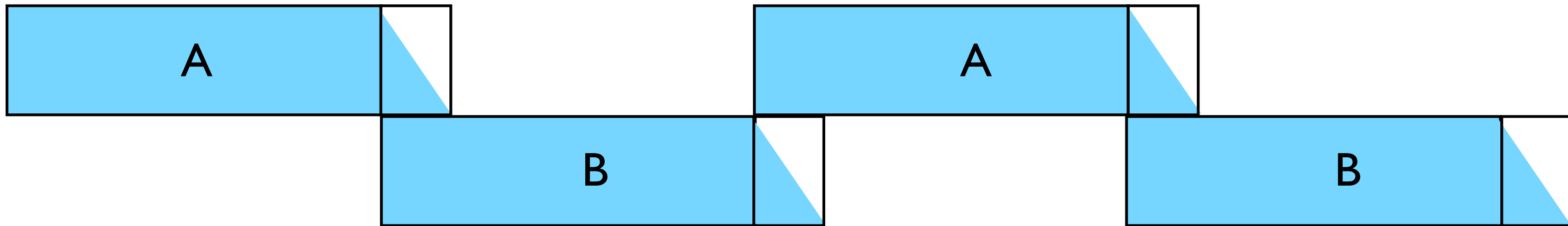


Chequerboarding



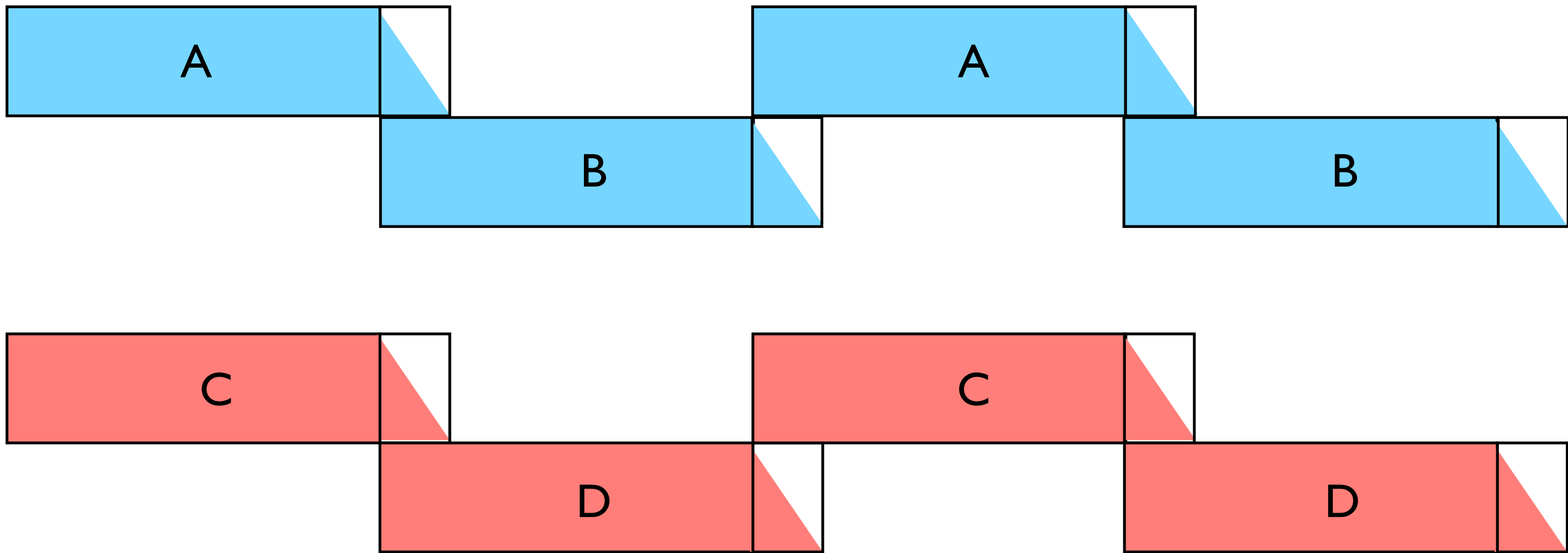


Chequerboarding





Chequerboarding



[illegible]



SUMMARY

- Orchestration is an integral part of composition
- Huge array of colors, textures and timbres
- Not just for orchestral music
- Consider stemming by **musical function**
- Plan carefully
- Clarity is essential
- Be **ambitious**



Questions?

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