

# *Differentiae* in the *Cantus Manuscript Database*: Standardization and Musicological Application

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September 28, 2018

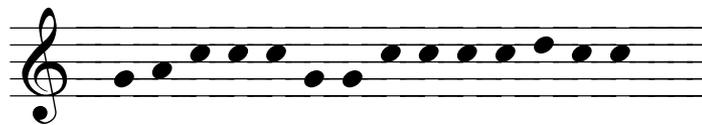


Social Sciences and Humanities  
Research Council of Canada

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sciences humaines du Canada

Canada

## 2. Psalm



[Mode 8 psalm tone from *Liber Usualis*]



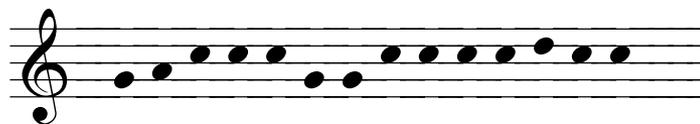


*Domine in virtute tua laetabitur* (f. 1v)  
from the *Salzinnes Antiphoner*, Mode 8  
Psalm Tone, Mode 8, *Liber Usualis*

### 1. Antiphon



### 2. Psalm



[Mode 8 psalm tone from *Liber Usualis*]

### 3. Antiphon





*Domine in virtute tua laetabitur* (f. 1v)  
from the *Salzinnes Antiphoner*, Mode 8  
Psalm Tone, Mode 8, *Liber Usualis*

1. Antiphon



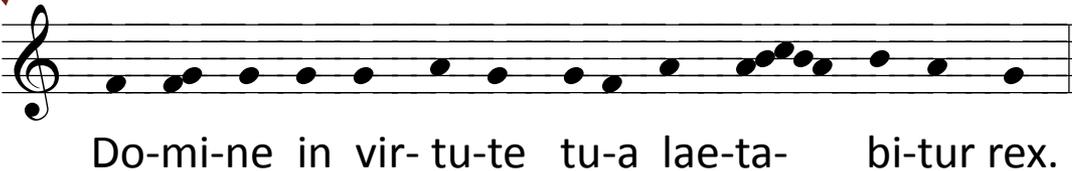
2. Psalm

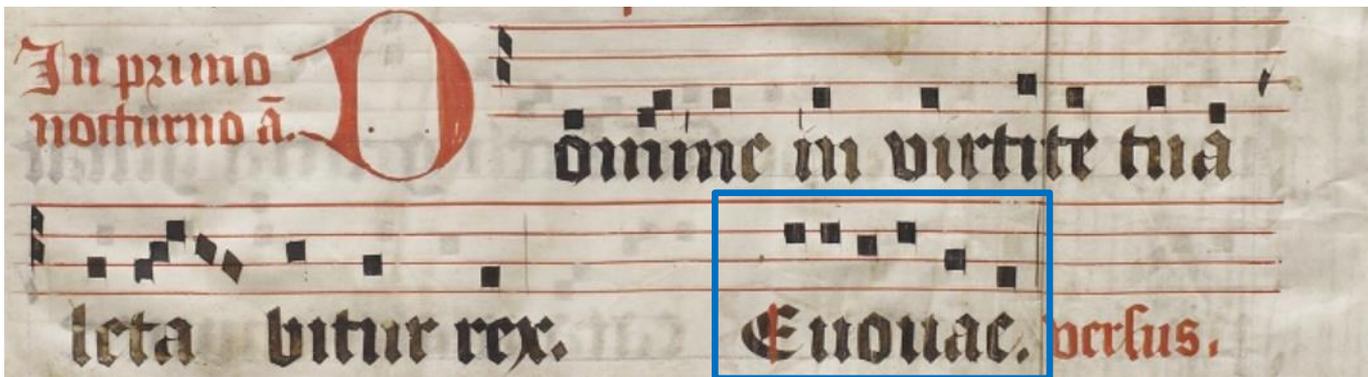


2a. *Differentia*



3. Antiphon





*Gloria Patri, et Filio, et Spiritui Sancto.*

*Sicut erat in principio, et nunc, et semper, et in sæcula*

***saeculorum. Amen.***

Glory [be] to the Father, and to the Son, and to the Holy Ghost.

As it was in the beginning, and now, and always, and into the ages of ages. Amen.

**Doxology**



*Domine in virtute tua laetabitur* (f. 1v)  
from the *Salzinnes Antiphoner*, Mode 8  
Psalm Tone, Mode 8, *Liber Usualis*

1. Antiphon



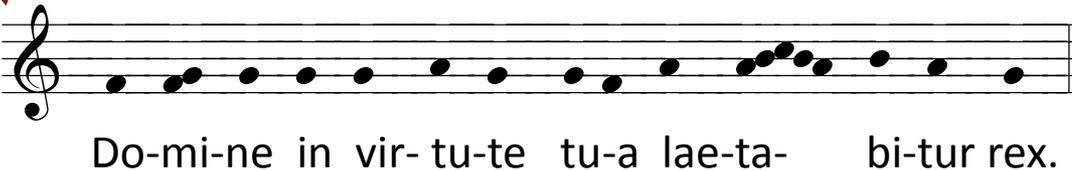
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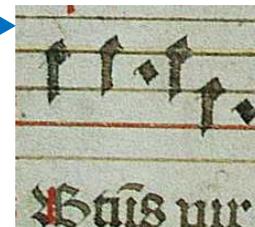
2a. *Differentia*



3. Antiphon



dale ue de qua ceciderat septem demoni a a eu ia **D**s innoie **q** r  
**S**urrexit dominus de sepulchro qui p nobis pependit in ligno. **Ad**  
acu ia **F**uouae **q** u galyca ilim uidebitis sicut dixit uobis a  
eius **F**uouae. **Ad** **M**ane uoluiti quonia aduersariat et in  
dmata est iam dies acua acua **F**uouae. **Ad** **R**yne. **ait**  
**H**eu ia a e uia acua a eius **D**ixit dñs **q** **M**eu ia a  
eua ae uia ae uia a e uia **C**onfitebor **q** **M**e uia a  
eua acua acua a eua **H**ais uir **q** **H**er di  
es qua fecit do minus exultemus  
et le te mur in e a **C**onfitemini do mi no  
quo miam bo nus quomam uisc



1) Standardization project

2) Musicological application

a) Melodic connection

b) Mnemonic function

# Ecce nomen domini venit de

Example of antiphon indexed in  
*Cantus Manuscript Database*

## Source:

Wien, Österreichische Nationalbibliothek - Handschriftensammlung, 1799\*\*

## Folio: Sequence:

001r 8

## Feast: Office/Mass: Genre: Position: Cantus ID: Mode:

Dom. 1 Adventus V A M 002527 1

## Differentia:

G1

## Manuscript Reading Full Text (standardized spelling):

Ecce nomen domini venit de longinquo et claritas ejus replet orbem terrarum

## Manuscript Reading Full Text (MS spelling):

Ecce nomen domini venit de longinquo et claritas eius replet orbem terrarum | Euouae

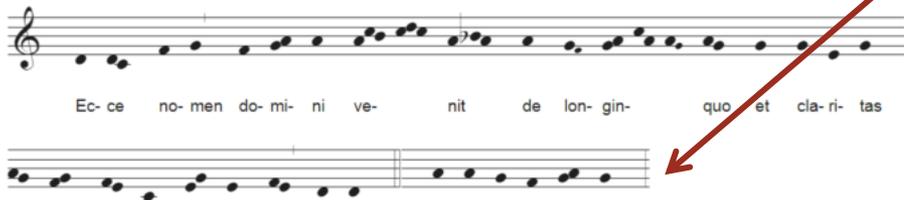
## Range:



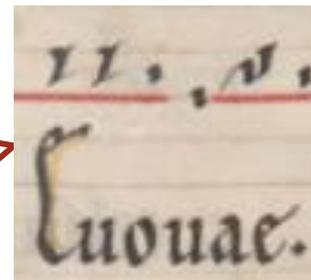
## Volpiano:



## Melody with text



e- ius re- plet or- bem ter- ra- rum | E- u- o- u- ae



## Scope of the standardization project to date

- 1,268 unique *differentiae*
- 152 manuscripts
- 14 - 96 unique *differentiae* per manuscript

# Ecce nomen domini venit de

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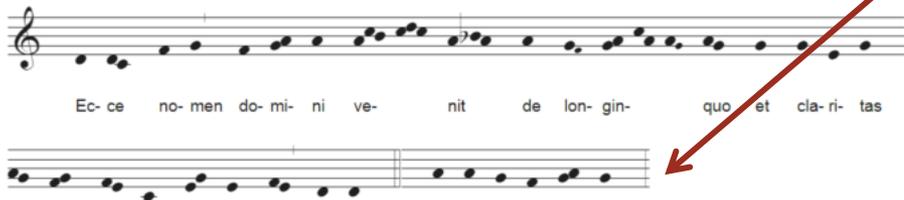
## Range:



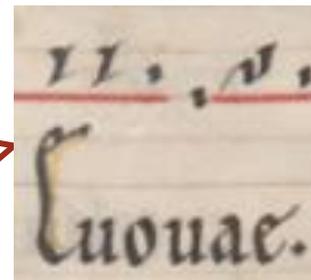
## Volpiano:



## Melody with text

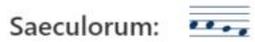


e- ius re- plet or- bem ter- ra- rum | E- u- o- u- ae



Example of *differentia* indexed in *Differentiae Database*

66d



Mode: Mode 1

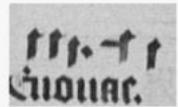
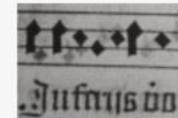
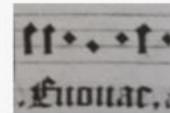
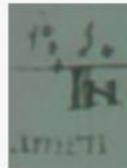
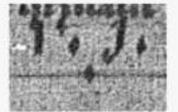
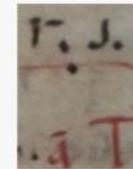
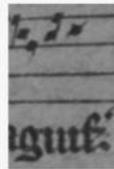
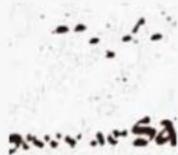
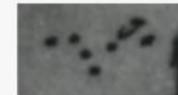
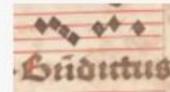
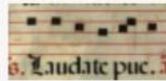
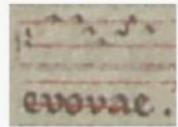
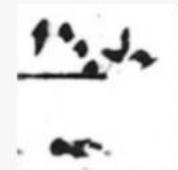
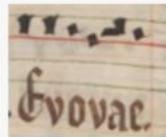
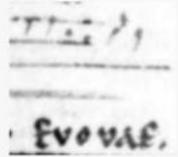
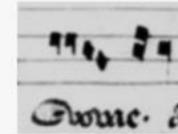
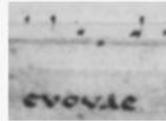
Generic contour: n-n-n-n-nu-n



Overall direction: Down



Manuscript examples



Displaying 1 - 129 of 129

	Mode	Melodic transcription	Contour	Saeculorum	Amen
66l	Mode 1				
74g	Mode 1				
59a	Mode 1				
T66l	Mode 1				
66d	Mode 1				
76b	Da				
64x	Mode 1				
70e	Mode 1				
75f	Mode 1				
124a	Mode 1				

66d



Saeculorum:

Amen:

Mode: Mode 1

Generic contour: n-n-n-n-nu-n

Contour:

Overall direction: Down

Overall movement:

Range:

## Unique Identifier

66d



Melodic transcription

Saeculorum:



Amen:

Mode: Mode 1

Generic contour: n-n-n-n-nu-n

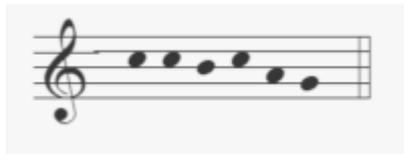
Contour:

Overall direction: Down

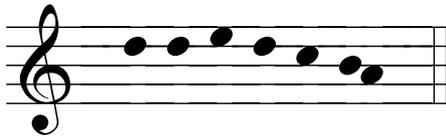
Overall movement:

Range:

Same melodic transcription:



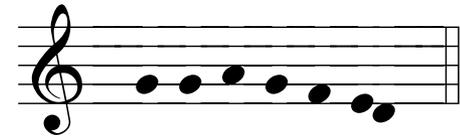
Diff. ID	Melodic transcription	Mode	Pitch Contour	Saeculorum	Amen	No. of mss. ▼
118a		Mode 8				134
118r		Mode 3				10
118ff		Gc				1
118ii		ac				1
118jj		Ec				1
118c		Mode 5				1



143b



Transposition



T143b

Transposition

**T143b**

Differences in  
neumation,  
grouping, mode

Pitch contour



1) Standardization project

**2) Musicological application**

a) Melodic connection

b) Mnemonic function



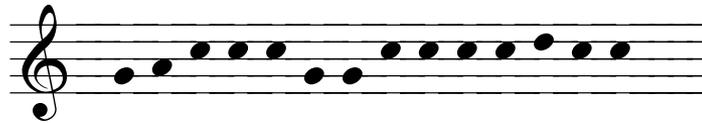
*Domine in virtute tua  
laetabitur* (f. 1v) from the  
*Salzinnes Antiphoner*,  
Mode 8  
Psalm Tone, Mode 8, *Liber  
Usualis*

### 1. Antiphon



Do-mi-ne in vir-tu-te tu-a lae-ta-bi-tur rex.

### 2. Psalm



[Mode 8 psalm tone from *Liber Usualis*]

### 2a. Differentia



Sae-cu-lo-rum a-men

### 3. Antiphon



Do-mi-ne in vir-tu-te tu-a lae-ta-bi-tur rex.



*Domine in virtute tua laetabitur* (f. 1v) from the *Salzinnes Antiphoner*, Mode 8  
Psalm Tone, Mode 8, *Liber Usualis*

### 1. Antiphon

Do-mi-ne in vir-tu-te tu-a lae-ta-bi-tur rex.

1

### 2. Psalm

[Mode 8 psalm tone from *Liber Usualis*]

### 2a. Differentia

Sae-cu-lo-rum a-men

2

### 3. Antiphon

Do-mi-ne in vir-tu-te tu-a lae-ta-bi-tur rex.



1) Standardization project

2) Musicological application

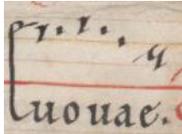
a) Melodic connection

b) Mnemonic function

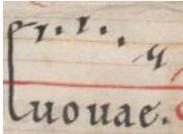
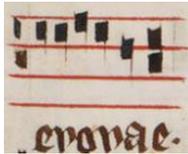
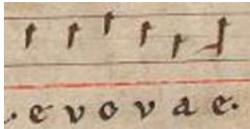
## Dataset

- 16, 314 antiphons and their *differentiae*
- 34 manuscripts (1100s – 1500s)

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<i>Differentiae</i>	Manuscript examples	Last Note	No. of Antiphons	No. of Manuscripts
		A	966	30

---

<i>Differentiae</i>	Manuscript examples	Last Note	No. of Antiphons	No. of Manuscripts
		A	965	30
		B	102	7
		C	393	11
		D	231	4

Last note of *differentiae* →

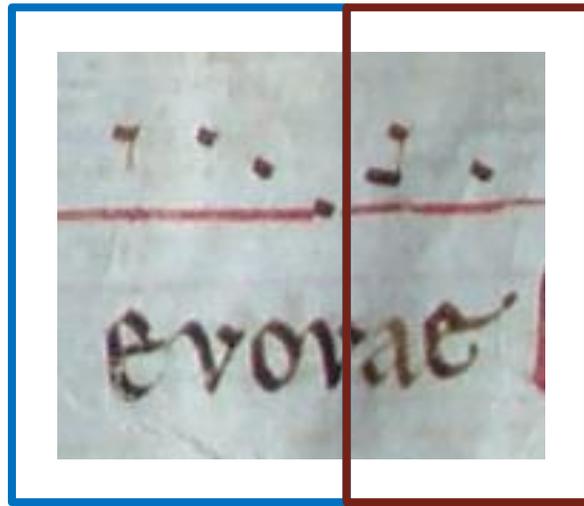
	A	B	C	D
A	8	2	7	<b>22</b>
B	7	<b>48</b>	14	<b>15</b>
C	15	3	5	3
D	13	<b>112</b>	<b>365</b>	<b>56</b>
E	1	2		
F				1
G	<b>921</b>	<b>64</b>	2	5

Mode 7, select *differentiae*



## Dataset: Mode 1

- 3,489 antiphons
- 67 unique *differentiae*
- 34 manuscripts (1100s – 1500s)



Sae- cu- lo- rum

A- men

Psalm → “Saeculorum”

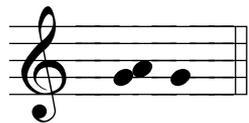
“Amen” → Antiphon

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**“Amen” endings**

**Antiphon beginnings**

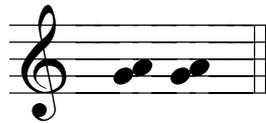
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D

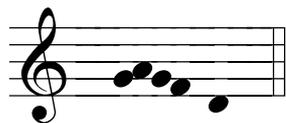
F

G



D-A

C-D-A



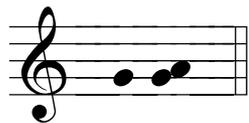
C (no leap from D-A)



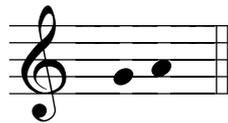
F-A-G



F-G-A



F-E-D-C



A

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Johannes Cotto,  
*De Musica* (12<sup>th</sup> c.),

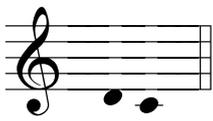
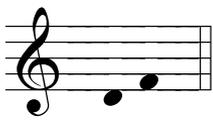
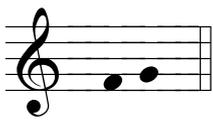
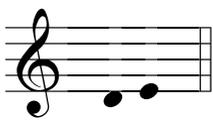
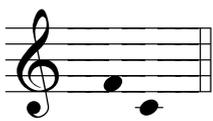
Mode 1

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<b>“Amen”</b>	<b>No. of antiphons</b>	<b>No. of manuscripts</b>
GAG	2456	34
GA	264	27
GAGFED	334	24
GAGA	163	20
AG	15	11
GFGA	41	6
GFD	35	6
G	11	4
GFED	258	3
GAGFD	101	3
FGFD	112	1
AGA	37	1
FGFDE	4	1
EFE	3	1

---

Mode 1, “Amen” endings

Antiphon Incipit	No. of Antiphons	No. of Manuscripts
	820	33
	535	32
	306	27
	252	26
	180	27
	88	22

Antiphon incipits for GAG “Amen” endings

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<b>Antiphon Incipit</b>	<b>No. of Antiphons</b>	<b>No. of Manuscripts</b>
	139	21
	49	8
	28	15
	19	10

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Antiphon incipits for GA “Amen” endings

<b>“Amen” ending</b>	<b>Antiphon Incipit</b>	<b>No. of Antiphons</b>	<b>No. of Manuscripts</b>
GA		19	10
GAG		306	27

Shared antiphon incipit for GA and GAG “Amen” endings



## **Mode 1 “Amen” categories:**

1. Descend from A to D
2. Centred around A

## **Mode 1 Antiphon categories:**

1. Contain A in opening gesture but not D
2. Contain D in opening gesture, A optional





**Group 2 “Amen”**

**Group 1 “Amen”**

**Group 1 Antiphons**

	G	AG	GAG	GA	GFGA	GAGA	AGA	FGFD	FGFDE	GAGFD	GAGFED	GFD	GFED
AC			4										
AE				3									
AF				9									
AG		4	7	139			22						
FA		4	44	28			10						
FG(A)	10	3	302	19			3						

Smooth connection  
Emphasis on  
reciting tone



**Group 2 Antiphons**

BD										14			
CD			252			71		78	4	64	275		92
CE			6										
DA			72	9	37	85							
DB			9										
DC			820					9			27	3	46
DE			177							1	5	18	12
DF			535					16			17	4	80
EC(D)			21										
ED			9										
EF(D)			6										
FC(D)			87										
FD			21										3
FE(D)			27	49									7
GC(D)			26										

Connection by leap  
Emphasis on final

Smooth connection  
Emphasis on final



1) Standardization project

2) Musicological application

a) Melodic connection

b) Mnemonic function

A Dñe ñsũ dignõ  
 A Dñe salua nos per  
 A Dñe bonũ e nos hie ee  
 A Vado ad patrẽ meũ  
 A Dñe vtaudeo pphõca  
 A Mulier venient dies  
 A Dñe sibi fuisset  
 A Exsurge dñe cõdica  
 A Dñs quidõ ibe post quã  
 A fõmes cõmnia  
 A Scũ sps cõanims iustex  
 A Istõs fortõs in bello  
 A Dñe quinq tal  
 A Demana omniũ  
 A Inimã pacis  
 A Dñe factũ õ vrap  
 A Dñe descende vtanõs  
 A Nisi tu dñe seruas

A Dñs defensor nũs  
 A Dñs iudicabit

PLAGIS PATRI  
 NOTAGIS.  
 SECUNDUM EST  
 AMOR PROXIMI  
 GLORIA PATRI ET FILIO  
 ET SPIRITUI SCO Sicut

FRAT IN PRINCIPIO ET  
 NUNC ET SEMPER ET IN

SAECULA SAECULO  
 RUM AMEN.

A Desion exibe lex  
 A Iusto cõpõe iuanã  
 A Coniungõ conuõge  
 A Spõ dñi sup me  
 A Constantes ostõre  
 A Osapientia  
 A Quõ in dõ distis pastores  
 A Genuit puõrpera  
 A Vurgo verbo con  
 A Icco maria genuit

SAECULORUM AMEN. q

A Cõnto lum tuũ  
 A Mei cõlac exeur ore  
 A fãccus es adiutor mĩ  
 A Sol cõluna laud  
 A Lazarus amicus nr  
 A Mibi viuere xpc õ  
 A Sup niuõ dealbas

SAECULA SAECULO  
RUM AMEN.

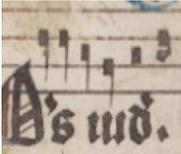
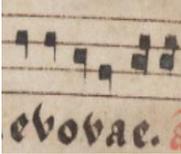
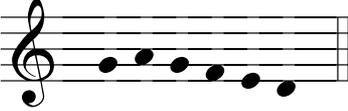
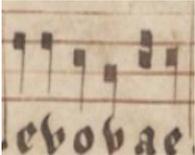
SAECULORUM AMEN.

Antiphon lists

Differentiae

Tonary as mnemonic aide



"Amen" contour	Manuscript Example	Number of Antiphons
		13
		28
		112
		299

Einsiedeln 611, Mode 1 "Amen" endings

		Group 2 "Amen"			Group 1 "Amen"
		GA	GAG	GAGA	GAGFED
Group 1 Antiphons	AB	1	Smooth melodic transition to the reciting tone		
	AF	2			
	AG	3			
	CG(A)		1		
	FG(A)	1	30		
	FA	2	1		
Group 2 Antiphons	CD		4	2	109
	FE(D)	4	4		Smooth melodic transition to the final
	DA		1	25	
	DC		127	1	2
	DE		31		1
	DF		100		
	ED		1		
	FC(D)		14	Leap to final	
	FD		5		

## Confirmed

- ✓ *Differentiae* provided melodic connections between psalm tones and antiphons
- ✓ *Differentiae* served as mnemonic devices for remembering antiphons

## Discovered

- ✓ Three specific types of mode 1 *differentiae*-antiphon connections
- ✓ Certain types of connections preferred depending on provenance of the manuscript (possibilities for chant transmission studies)

Quantifiable evidence of *differentiae* function

# Questions, comments?

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